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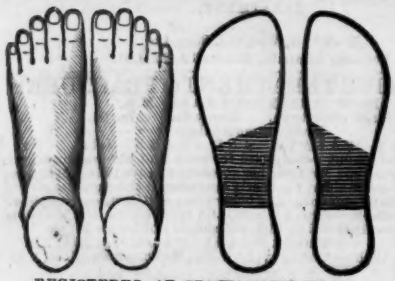

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A Lecture
ON
MALINGERING IN ACCIDENT AND DISEASE.

Delivered at the Medical Graduates' College and Polyclinic on Jan. 20th, 1913,

BY SIR JOHN COLLIE, M.D. ABERD., J.P.

GENTLEMEN,—I propose dealing with this subject under the following heads: (1) the mental outlook of the malingerer; (2) the relative proportion of the malingerer to the genuinely disabled; and (3) a few hints as to how to examine and how to deal with feigned sickness and disease. If time permits I shall give you a few hints as to your conduct in court when giving evidence in the particular class of case we are dealing with this afternoon.

I.—THE MENTAL OUTLOOK OF THE MALINGERER.

This lecture deals with a very dark side of human nature, and does not admit of the display of that sympathy which I trust all genuine cases receive.

The methods of the conscious deceiver are so ingenious, and the mental outlook of the unconscious exaggerator so difficult to deal with, that having in view the fact that now it will be necessary for all medical men to look for the possibility of deceit or exaggeration in many of the cases that come before them, I propose to mention a few typical cases from my own experience, and offer certain tests for discovering, and remedies for dealing with them.

Cases will undoubtedly arise when it will be our duty to protect, or assist in protecting, the State, the Approved Societies, and employers, from the unjust and improper demands which will be made upon them. The cost of insuring against accidents to industrial workers is now far in excess of the actuarial estimates upon which the Compensation Acts were based, and a study of the statistics in relation to non-fatal accidents shows an increase in the number of these accidents since the advent of this legislation which cannot be accounted for even by the speeding-up of machinery and the conditions of modern labour. Malingering and dishonesty must have had an influence in raising the figures to their present abnormal height. Naturally the amount of compensation paid is reflected in the premiums demanded; therefore, unless unjust claims are sternly repressed, the burden upon the community will be greater than it legitimately should be.

It is seldom that so gross and deliberate a fraud is perpetrated as the following instance, which occurred in the practice of a personal friend of mine:—

Dr. F. was asked to examine a man, A A, of the shopkeeping class, who informed him that his life was insured, that he had allowed his policy to lapse through non-payment of the premiums, that he desired to resuscitate his policy, and that the insurance company had agreed to his doing so on condition that he sent a cheque for arrears of premiums, accompanied by a medical certificate stating that he was in good health. He therefore appealed to my friend to give him the necessary certificate, which Dr. F. expressed himself quite willing to do after, and only after, he had thoroughly examined him. In vain did the patient point out that the fee allowed by the company was a very small one, that the certificate was only a matter of form, and that, as a matter of fact, he was in perfect health. The examination was undertaken; indeed, it was done with some thoroughness, for the applicant was stripped to the waist, and his lungs and heart carefully examined. Whilst thus undressed, placing his hands on his hips, or in that neighbourhood, he struck an attitude, saying, with some emphasis: "Now, doctor, are you satisfied? Am I not a fine fellow?" My friend's reply was that he did not think so, but, as he could find nothing wrong, he supposed he would have to give him a certificate, and he did.

Six months afterwards an insurance company communicated with the doctor, asking why he had given a certificate of good health to one of their assured who had just died from cancer of the rectum, and who had had an inguinal colotomy performed *antecedent* to the date of his examination.

The brave words, the dramatic attitude, the hands on the hips, were all a piece of consummate acting, designed to cover the tell-tale scar of a colotomy wound!

The detection of malingering is not always so much a question of scientific knowledge as of the personal equation of the examining medical officer. He must be independent and fearless, and his general alertness must be past all telling. Large experience of this class of work gives one a sort of instinct when dealing with the malingerer.

A lady, A B, who had met with a trifling accident some three or four years prior to my seeing her, had, from first to last, been examined by no less than nine doctors. I was called in consultation a few days before the trial, with a view to giving evidence in the High Court. I reported that she was obviously ill medically, but was not suffering as the result of any accident. A few days later the case was settled out of court, and the lady wrote to me saying that now the claim was settled she would like to know if I had been astute enough to see through her case, kindly adding that she believed I had done so. My curiosity was aroused, and I took the unusual course of calling upon her, when she confessed that at the date of my examination she was convalescing from typhoid fever, the knowledge of which she had suppressed from everyone but her own doctor.

Those who do much medico-legal work are constantly coming across cases of strong, healthy, able-bodied people who are absolutely well and fit for work, and are suffering from no pathological condition, but who have become self-centred, and, having a lively appreciation of the supposed benefits of obtaining money which they do not earn, have become victims of the operation of the Workmen's Compensation Act and other Acts conferring benefits in the event of illness or injury.

When a man or woman neither expects nor desires to get well, has evidently an intuitive knowledge of the methods of malingering, and openly expresses strong views about the liability of his employers, the condition is psychic, not physical. Many of these claimants absolutely deny receiving assistance from more than one club, and it requires considerable fortitude and not a little knowledge of human nature to wring from them the fact that they are in receipt of what to them are considerable sums of money from more than one club. Malingerers of this type can only be dealt with by strong measures. It may be said that such cases are exceptional, but recently, on my advice, at least 18 consecutive cases have been taken to the law courts for decision, and the result in each case has justified the advice given.

A knowledge of the number of Friendly Societies from which a sick man is receiving assistance is often of very great value. Whilst every working man should be encouraged to make adequate provision for the inevitable rainy day, it is the duty of the examiner to scrutinise very carefully the case of the employee whose total income when ill exceeds his earnings when at work. One may be excused for viewing such a case with considerable suspicion when an attempt is made, as is so often the case, to conceal the number of clubs and minimise the benefits received therefrom. A return to work at the earliest possible moment is almost more than can be expected of human nature when one finds oneself in the position of being better off when not working than when engaged in the hard and laborious work of the artisan classes.

If an introspective, self-centred workman is unfortunate enough to find himself entitled, when sick, to the material advantages before mentioned he is much to be pitied, for he is subjected to temptation that many succumb to, even in a class whose antecedents and traditions are not his. It is impossible for him to think impartially. Consciously or unconsciously, he is influenced not only by his immediate environment, but by his individual mental outlook.

A C, after being for four weeks on the sick-list, complained of being still unable to work, owing to an injury to his knee. No abnormality being found, he was told to resume duty at once. As he did not do so he was again sent to me a few days later. Still nothing could be found; he stated, however, that his knee swelled when he walked. Having measured his knee, I sent him out to walk for two hours. On his return no swelling was discovered by measurement. He was told to resume work forthwith, which he did.

A D fractured his fibula, a condition which, most surgeons will agree, wholly recovers in from six to eight weeks. He drew compensation for two years, limped badly with a stick, *but sometimes forgot to do so*. He was very indignant when told that the time had come when he should resume work, and it required the lengthy procedure of the law courts to induce him to return to work.

Prior to the passing of the National Health Act many medical men who have looked to a club practice as the staple factor of their income have been dependent upon their popularity with the working men for the security of the tenure of their office, because it was well known that a doctor who freely certifies for sick benefits was considered a "kind" man, and was appreciated by the working classes. If the employee's doctor had the courage he would, at a very early stage, cause the morbid growth of ideas to abort by resolutely declining to be a party to exaggeration and self-examination. If this is not done at an early stage it is hopeless to attempt it later on. Surely it is the duty of

medical men to help the State to count amongst her citizens the maximum number of units capable of working.

Germany, by means of invalidity insurance and other schemes, pays those of her workers who suffer in the stress of industry, but a very strict watch is kept upon the treatment. They are compelled, if so desired, to enter a hospital for observation. I have sometimes found it very useful to adopt this method when patients can be induced to enter a hospital. The following case is illustrative of the value of this procedure:—

A E was engaged in a branch of the public service to which was attached a liberal pension. Seven years previously he had been off work for a whole year, suffering from a strained back; received full wages and the use of a cottage. On this occasion, having been off work nine months with his back (again said to be strained), he was sent for examination with a view to superannuation. I sent him to hospital for observation. After 11 days he was told he would be reported as a malingerer and lose his pension if he did not immediately resume work. He left hospital and resumed work next day.

When a patient consults his doctor there is no reason why he should not be absolutely frank; indeed, the whole transaction is based on this premiss. When examining for an insurance company one has to introduce a little of the spirit expressed in the old maxim, *caveat emptor*.

Some time ago I found that a specimen of urine contained albumin, and laid it aside for further testing. The next patient could not urinate in the consulting-room, and was asked to do so alone in my laboratory. Finding he could not micturate even then, he craftily presented me with a specimen which he had poured from the one he found already there. It was only upon my telling him that I had found albumin in his urine that he confessed. The lesson was a valuable one.

An alien who met with an injury to his shoulder stated that he could not raise his arm from his body more than a certain height, and this he demonstrated by raising it to no more than a right angle. Remembering the old well-known trick, I suddenly asked him how high he could raise it before the accident; he shot it high above his head!

A F complained of one thing only, and that was inability to raise his arm above a right angle. He had fractured his clavicle some four months previously. When asked to take off his vest, which was very tight, in his struggles he raised both arms high above his head without noticing that he was doing so, and without complaint. The attention of his medical attendant, who was present, was drawn to this. The doctor seemed much impressed by this silent confirmation of my contention that no real disability existed.

Perhaps it is not much to be wondered at that needy toilers become self-centred, exaggerate disturbances of function, and seize upon slight aches following accident as a means of temporary escape from the humdrum of manual labour. It must be remembered that the fixation of attention upon internal organs, or upon a back supposed to be strained, does, in fact, reflexly, if it does not actually, produce the condition looked for; it certainly augments abnormal sensations.

Apart altogether from attempts to postpone return to work or deliberate malingering, there is a large number of men who put off the return to laborious work merely because they do not appreciate that complete recovery is always a gradual process, and that stiffness, and even some slight degree of pain, seldom entirely disappear until an injured part has been subjected to a certain amount of movement and exercise—such, indeed, as they might reasonably be expected to put up with, having regard to the fact that it can only be of a temporary nature. I am convinced that this is the real explanation of a large number of cases which find their way to the arbitration courts.

A working man told a friend of mine that, prior to his visit for the purpose of examination, he got the following sage advice: "'When yer get 'urt,' 'e says, 'say it's yer back; the doctors can't never get round yer back.'"

What in the days of Erichsen used to be called "railway spine" or "concussion of the spine," and was supposed to be based on organic changes in the spinal cord, is now known as "hysterical spine," in which there is alleged hypersensitiveness over various areas, generally the sacro-lumbar region. It is, in truth, merely a psychical condition, which is particularly intractable to treatment. There can be no doubt that in former days railway companies were mulcted in large sums, and that introspection and gross exaggeration brought heavy damages in their train. Modern methods of psycho-therapeutics would have led to different results.

In the ordinary so-called "railway spine" there is no proof that the spinal cord has been jarred; indeed, the analogy between concussion of the brain and alleged concussion of the spinal cord is far too readily accepted. It is true that the brain fully fills the brain case, and that a jar upon the skull directly jars the brain; accordingly this organ at post-mortem examinations is often found to be lacerated. The anatomical relations of the spinal cord are, however, entirely different. The cord does not nearly fill the spinal canal, but is surrounded by a large quantity of cerebro-spinal fluid, and is suspended in the fluid by lateral ligaments at intervals throughout its whole length. The cord is thus particularly well protected, and it is extremely doubtful whether concussion of the spinal cord can ever occur.

Pain in the back following an accident is a condition which is often caused by suggestion—auto-suggestion. It does not necessarily mean malingering, but pain in the back after an accident, be it caused by a default in a wealthy railway company or by a mishap in one's own garden, is much more often than not accompanied by no serious pathological change. The pain is often only psychic.

Experience teaches that closely similar injuries attributable to like accidents present one kind of clinical picture and run one kind of course amongst those who make no claim for compensation, but they present a very different picture and run a very different course amongst those who embark upon the troubled sea of litigation. This difference is highly significant of the influence of litigation in magnifying pain and perpetuating incapacity.

The trouble in dealing with cases which ought really to be termed "fraudulent" is not so much the difficulty of recognising the fraud as of determining its gravity in relation to each individual concerned, because what would amount to a fraudulent statement if made by a fairly educated working man must be treated as a mere exaggeration when proceeding from the mouth of an East-end alien tailor.

II. When we try to estimate

THE RELATIVE PROPORTION OF MALINGERS TO THE GENUINELY DISABLED,

it must be remembered that statistics relating to this particular class of cases are practically non-existent, for until recently attention has not been drawn to the matter. I am, therefore, in dealing with this subject, forced to draw mainly from my own experience. Two large public bodies and some 15 to 20 insurance companies send sick and injured work-people to me for my opinion as to their fitness or otherwise for work. For some years past I have seen approximately 2000 such cases a year, and 25 per cent. (*one in every four*) were reported to be fit for work. The majority of these were not typical maligerers, but they would, nevertheless, from various causes, have unduly prolonged their illnesses.

In the case of a large group of employees in a public service, all of whom had been medically examined before entering the service, and were entitled to medical attendance by district medical officers paid by capitation grant, it was found that, prior to the institution of the independent medical inspection after 28 days, the total number of days men were on the sick list amounted in one year to 14,400, whereas, subsequent to the institution of the new rule, this number was reduced to 9600—a reduction, in a well-organised and disciplined small force, of no less than 4800 days in one year, the percentage of reduction being 33⅓. During the corresponding periods the total number of men sick for *more* than 28 days was reduced by the somewhat surprising figure of 50 per cent.

A G, who had been drawing sick pay for nearly two years prior to the passing of this 28-day rule, complained that he was weak and had a pain in his back, and that the weather affected it. I satisfied myself that he had no physical disability, and pointed out to him that, as he had not given notice of his injury a year ago, he could not claim under the Employers' Liability Act; that the alleged accident happened prior to the passing of the Workmen's Compensation Act of 1906; that I believed he was never really ill; and told him that he was to return to duty forthwith, otherwise I would report him unfit for duty, and he would be dismissed without compensation. He returned to work, and has never complained since of his back or any other portion of his anatomy.

Non-litigious cases can be dealt with with comparative ease. The following cases illustrate how easily such cases may be handled when they are dealt with by representatives of the employers, and when, presumably, they are not contemplating litigation.

A H had an accident; seen after having been treated for myelitis for 13 months; full pay most of the time; bedridden; ordered to hospital for observation, where he had "fits"; blackened his face to give them a realistic effect. I sought and obtained a private interview with him, and ventured upon some exceptionally straightforward plain

speaking. He walked to my house, distant a mile, next day, and resumed work within a week.

A I, a pensionable officer, had malingered for 13 months; complained of obscure pains; examined by 11 doctors during his supposed illness. Never had any objective symptoms; kept under observation in hospital for nine weeks; charged with malingering before employers; ordered to be dismissed and forfeit pension if work not resumed. Commenced work forthwith.

A J, who had been on the sick-list for three weeks, was sent to me as he complained of a sprained right thumb. He had made the journey to my house from his home—a considerable distance—on his bicycle. As there was nothing apparently wrong with his thumb, he was told that as he was able to ride his bicycle he was able to resume work at once, which he did.

The following case illustrates the advantage that may be obtained from an unexpected visit:—

A K detained me a suspiciously long time at his front door. Thinking that he had probably been getting into bed whilst I waited, I ventured to look below the table, which was covered with a table-cloth, and there found his clothes, which he had evidently just taken off. I have no doubt that, had I followed the example of the late Mr. Rose, and put my hands into his boots, I should have found them warm.

The following fraud would scarcely have been attempted had a regular system of lay supervision been in vogue:—

A L was recently sent to me by a solicitor for examination and report. An appointment was made, and a man giving the correct name attended. He was duly examined; he had the usual pain in his back, tenderness, giddiness, incapacity for work, &c. He said he was a boxer, and looked one. I was about to write my report and state that he was a malingerer when the solicitor rang me up on the telephone and asked me to describe him. I did so. It then appeared that this scoundrel was counterfeiting and assuming the name of another. He was detained, under some pretext, while a detective who knew him was sent to my house. They were brought together by a subterfuge, and he was, as we had expected, an impostor. This man and a friend made a living by periodically having accidents!

III.—THE EXAMINATION OF MALINGERERS.

It is a good plan to count the pulse-rate at the commencement of a medico-legal examination and again at the end, and to judge of the condition of the nervous system by a comparison of the two rates. Admirers of Scott will remember that in "Peveril of the Peak" that consummate master of English literature portrays with dramatic effect the discovery that Fenella was malingering when she assumed the rôle of a deaf mute. The following is the passage referred to. Said the King:—

"I will instantly convince you of the fact, though the experiment is too delicate to be made by any but your ladyship. Yonder she stands, looking as if she heard no more than the marble pillar against which she leans. Now, if Lady Derby will contrive either to place her hand near the region of the damsel's heart, or at least on her arm, so that she can feel the sensation of the blood when the pulse increases, then do you, my Lord of Ormond, beckon Julian Peveril out of sight. I will show you in a moment that it can stir at sounds spoken.

The Countess, much surprised, afraid of some embarrassing pleasantry on the part of Charles, yet unable to repress her curiosity, placed herself near Fenella—as she called her little mute—and, while making signs to her, contrived to place her hand on her wrist.

At this moment the King, passing near them, said: "This is a horrid deed—the villain Christian has stabbed young Peveril!"

The mute evidence of the pulse, which bounded as if a cannon had been discharged close by the poor girl's ear, was accompanied by such a loud scream of agony as distressed, while it startled, the good-natured monarch himself. "I did but jest," he said; "Julian is well, my pretty maiden. I only used the wand of a certain blind deity called Cupid to bring a deaf and dumb vassal of his to the exercise of her faculties."

"I am betrayed!" she said, with her eyes fixed on the ground—"I am betrayed! and it is fit that she whose life has been spent in practising treason on others should be caught in her own snare. But where is my tutor in iniquity? Where is Christian, who taught me to play the part of spy on this unsuspicious lady, until I had well-nigh delivered her into his bloody hands?"

Where, as sometimes happens when legal proceedings have been instituted, the statement of claim is submitted to the medical examiner, a careful note should be made of the different allegations as to the effect of the accident, *and* of the discrepancies, if any, between the patient's statement as to his disabilities and that put forward by his solicitor. There is often a marked difference between the condition of the claimant on the date of his medical examination and that which he presumably was in when the lawyer was furnished with the details of how the accident had affected him.

There is only one way of getting at the facts systematically, and that is by first asking the patient for the history of the accident (letting him understand that only such details as will assist in forming an opinion from a medical point of view are desired), then insisting upon his stating categorically his *present* complaints. Everything that the patient says in his history should be carefully written down at the time, as nearly as possible in his own words, for future reference.

In eliciting the history of the accident great care should be taken to avoid giving information to the claimant. A very great deal of mischief is done by doctors, unused to these cases, who put leading questions; who, for example, ask a man who alleges "slipped cartilage" whether his knee was locked; or trace out the course of a nerve, and ask whether the pain radiates along it; for they supply the dishonest man with material for bolstering up his case, and furnish the true hysteric or neurasthenic with a list of new complaints; for to *suggest* new symptoms to such patients is tantamount to causing them to experience the same. Under no circumstances, therefore, should leading questions be put.

Claimants are very apt, in giving a history, to mix up symptoms from which they *have been* suffering with those from which they *are* suffering at the date of examination. The examiner should keep very clearly before him the fact that he is called upon to examine and to report on the physical and mental condition of the applicant *at the time* of his examination. If any attempt be made to report on the condition of the claimant from his *ex parte* statements prior to the examination, it inevitably leads to confusion.

In considering the value of a history, the influence of age is important. I have invariably found that children are by far the most honest claimants. When an insurance company sends me a little boy or girl to examine and report on, I am always pleased, for they seldom lie to a doctor, or, should they do so, are easily caught out, especially if their parents are resolutely forbidden to interfere or to coach at the interview.

P. T. I well remember a fine little fellow whose parents were claiming £1400 for serious injuries done to the boy's head. He was supposed to be mentally defective in consequence of the head injury, for which he had been trephined. I tried him with vulgar fractions; this, apparently, was his *forte*. His spelling he was proud of. He distressed his mother by the way he showed off his general intelligence. Finally, when I asked him which eight had won the Boat Race this year and the year before, he fairly scoffed at my ignorance. I verily believe he knew the last Derby winner. The mother was very angry—but she took £250.

A slightly flexed position is the most comfortable one for the knee-joint, and this position is, as a rule, assumed when either sitting or lying. More especially is this the case if the knee-joint is the subject of pain or swelling. Occasionally the knee is kept rigid, as if in a vice. The idea seems to be to impress the examiner that there is an entire absence of all movement, and that the condition is correspondingly serious.

A N stated that whilst unloading a ship he injured his left knee. There were no physical signs as the result of his alleged accident. He had suffered from varicose veins for many years; this he admitted. He refused to bend his joint except to a very slight degree, asserting that even this caused him intense pain. I therefore had both knees X rayed with negative results. Later he was induced to consent to being put under an anæsthetic. When he had been suitably prepared by fasting and was in sight of the couch and apparatus it was explained to him that if he could now bend his knee the anæsthetic would be unnecessary. This he did at once voluntarily, flexing the knee so that the calf pressed on his hamstrings!

He was then asked to stand upon a chair, and to get on to it by putting his left (injured) leg first on the chair. He did so, and thus raised his whole body (more than 11 st.) on his injured knee without complaint!

A O was condemned by a house surgeon to wear for many weeks a back splint for an alleged stiff right knee. I removed the splint and directed her to sit down and take off her right boot; meanwhile I eagerly plied her with questions as to exactly what happened at the moment of the accident—whether the company's servants had been becomingly polite, what she said, what they said, and so forth—all of which was no business of mine. It was intensely interesting to her, however. She forgot the present and lived in the past, removing her boot in the usual way as she spoke—i.e., she crossed her legs and bent her knee!

The physiology and psychology of her sex often make the medical examination of a woman peculiarly difficult. When she is ill, or thinks so, she is apt to be hypersensitive, sometimes loses her sense of perspective and proportion, while occasionally she is almost irresponsible. The feminine nervous system is much more unstable, and can stand strain less than that of men. Physically, there is less reserve; as a result, when injured, the feminine method of expressing sensations and emotions is not always easily understood. Most men, for instance, intuitively understand the connexion between cause and effect, but many women seem to blind themselves to this, and think things must turn out as they hope; hence the necessity for great care, infinite patience, and an impenetrable reserve during the medical examination.

The physical examination of the patient should always be

as thorough as possible. Never was the old instruction of "eyes first, ears second, hands third," more necessary than in dealing with these cases. The patient should be carefully watched as he undresses, as he takes off his boots, and so forth. All dressings should be removed, for it will often be found that the most portentous dressings cover the most insignificant wounds.

A P, who covered a wound ½ inch broad with ointment, lint, three bandages, and a large gout-boot, was obviously surprised, and I fancy not a little indignant, when most of his dressings were put in the fire and he was told to resume work that day.

Crutches and sticks, if used, should temporarily be taken away. The examinee should be sufficiently stripped for thorough examination, and the light should be the best possible, for in these days of aseptic operations it is very easy to miss the delicate scar of an appendicitis or a gastro-enterostomy operation, or such things as the marks made by the pressure of a truss.

It will generally be found that the more honest the patient is the more clear-cut are his statements and his description, whereas if he is trying to deceive it will be found difficult to pin him down clearly to any definite statement. If asked, for example, where the pain is felt, he will move his whole hand vaguely over a wide area, and will only with difficulty be induced to put one finger on the spot. A feature of lying is that it requires a very good memory, and, knowing this, the malingerer naturally tries to make his tale as indefinite as possible, so as to lessen the strain on his memory. He will, moreover, always try to look at the spot complained of; this should be avoided either by making him turn his eyes away or, more safely, by bandaging them.

It is advisable in all cases, after going over the symptoms of which the patient complains, to make sure that there is nothing grossly wrong with the chief organs of the body—the lungs, heart, &c.; to test the urine; and in all cases to run over the chief reflexes—the pupil, knee-jerk, Babinski, and so forth. Sugar and albumin are not infrequently found at these examinations, and albuminuria and diabetes, as the result of an accident, are frequently alleged. Discomfiture of the examiner in the witness-box will be caused if the urine has not been examined. Finally, the patient should be watched as he dresses himself, and the examiner will often be amused at bandages discarded and dressings forgotten.

Those familiar with actions for damages are frequently confronted with cases of which the following is a hypothetical example:—

The recipient has a compound fracture of the tibia and fibula, and after, say, three months fairly good union has been obtained. By means of a couple of crutches he moves himself with much care and deliberation. The ankle-joint has become stiff. So-called massage is imperfectly performed by an unskilled attendant or by a relative. Time passes, and perhaps about the seventh or eighth month the employer becomes impatient, and sends his medical man to examine and report on the claimant. The suggestion is then made that he ought to be fit for work in a few weeks. The bare audacity of such an unsympathetic attitude is bitterly resented, and further medical evidence is sought to controvert, in court if necessary, the evidence of the employer's doctor. Some stiffness or rigidity of the back is discovered by the plaintiff's doctor. The back is X-rayed, and a few osteophytic outgrowths are discovered in the neighbourhood of the sacral or lumbar region. Hey presto! From that day the case takes on a totally different aspect. The statement of claim is amended to include injury to the spine. Not unnaturally, under the influence of suggestion, the back becomes stiffer, and the crutches which had been discarded before the employer's doctor saw the claimant are unearthed and again brought into use.

At the trial an X ray photograph is produced. No X ray expert is called, who would, if asked, inform the court that these osteophytic outgrowths are not indicative of any disease due to traumatism, but are frequently met with when X ray photographs are being taken for other purposes, such as the examination of the kidney. The judge and jury see the osteophytes. The plaintiff is asked if he ever felt anything the matter with his back before the accident. The jury cannot get away from the idea of the crutches, the pitiful tale, and counsel's eloquence, and heavy damages follow.

If our legal friends and sympathetic jurymen knew more of the sticks, crutches, and elaborate dressings that are sometimes left behind in medical consulting-rooms they would be less sympathetic with doubtful cases. The law is that the defendant should have the benefit of any doubt, but what the defendant objects to is that the plaintiff so often gets the benefit even when there is not any reasonable doubt.

Recently, in dealing with a most determined malingerer who for months kept his back so bent that his face always looked to the ground, I was able to induce him, when stripped, to lie absolutely flat on a sofa without complaint. Subsequently most of the man's clothes were placed under his back, thus arching it in exactly the opposite direction to that in which he held it before, and this without any complaint.

Not infrequently very simple tests are of the utmost use, but it is important to recognise that usually the method of applying the test determines its success or failure.

A Q met with an accident, and took to his bed. He groaned piteously when asked to turn, and assumed the attitude of one thoroughly exhausted. At the end of the examination, having left the room, I suddenly returned, and found him, with a smiling countenance, sitting up in bed detailing to a friend how exceedingly clever he had been!

Very often, for instance, when a patient comes into the room he will reciprocate a hearty grasp of the hand, but will absolutely refuse to grasp one's hand firmly during the ensuing examination.

A R, whilst in the act of scrubbing a floor, had the misfortune to run a needle deeply into the palm of her right hand. An insurance company for whom I act paid half wages for two years, and then sent her to me for examination. Immediately upon entering the room, and before the examination had commenced the woman was asked to close the fingers of the injured hand and to resist my forcibly opening her fist, and this she did without complaint, demonstrating that she had no pain or loss of power. But later on in the examination and upon a subsequent examination two months later she complained bitterly of the most intense pain when the hand was touched, however lightly. An X ray photograph proved that the needle was still in the hand, but lying parallel to, and snugly embedded between, the bones of the palm of the hand, in which position it was hardly possible for it to cause pain. An unsuccessful attempt had been made by a surgeon to remove it.

A R was obviously in a very highly strung, nervous, and excitable condition, and the opinion I formed was that she had got the idea of the presence of the needle in her hand on her mind, and that this was making her ill. As work was the only cure for this condition I recommended that her weekly allowance should be stopped, as she would then be compelled to take up her old employment again. This was, of course, contested, and at the trial much medical evidence was given. It was noticeable that, although two doctors were called to support her contention that the presence of the needle accounted for her nervous condition, her own family doctor was not put in the witness-box. The judge, after considering the matter for two months, decided in favour of the insurance company, and stopped payment. A month after his decision one of the medical men who had given evidence in opposition to my view kindly informed me that to his surprise he had learned that the applicant had just had a serious operation for a large cancer in another part of her body, from which she was undoubtedly suffering at the time of the trial. Six weeks later I learned that she had recovered from the operation for cancer, had returned to work with the needle still in the same part of her hand, proving, as I had contended at the trial, its mere presence was not the obstacle to work.

It will be noticed that whilst the applicant in this case resisted my forcibly opening her fist *early* in the examination, at subsequent examinations she complained bitterly when the hand was even touched. As it subsequently turned out, this was a procedure of the utmost importance in the case, and, in fact, the judgment which the insurance company ultimately obtained in their favour hinged upon this one incident. For the judge, in adjourning the case for his consideration, remarked that if he decided to accept this part of the evidence he must find for the company.

A good method of exposing pretended loss of feeling is to bandage the eyes, map out with a pin the alleged anæsthetic area, mark the circumference of it with a blue pencil, and repeat this proceeding at short intervals, when the area will be found to vary.

The rank malingerer, especially if he is unintelligent, may occasionally be caught out by a very simple test. If loss of sensation is alleged—say, in the leg—both legs are bared, the patient is blindfolded, and the legs pricked. He is asked to say definitely and at once "Yes" each time he feels the pricks, and "No" when he does not. Occasionally, but by no means always, an amusing result is obtained, the patient correctly saying "Yes" when pricked in the sound leg, and on each occasion when the leg alleged to be anæsthetic is pricked giving the answer "No." In using this test it is well not to prick the legs alternately, but to vary the sequence of the pricks, for it has been alleged, after a successful application of this device, that the patient, assuming that each leg was to be touched alternately, gave the correct answer; but a satisfactory explanation cannot be forthcoming of why the answer "No" was ever given, seeing that if there was no sensation there should have been no answer at all, and evidence of fraud is thus obtained.

The following case illustrates the value of adopting a firm attitude where one is satisfied that the time has passed for leniency and consideration:—

History.—A S, a painter, fell off a ladder whilst at work. He attended for seven weeks as an out-patient at a large general hospital for treatment of dislocation of shoulder-joint, simple fracture of radius and ulna at right wrist, and abrasions.

The alleged disability still continuing 19 weeks after the accident, he was examined on behalf of his employers by a doctor who reported that A S had recovered sufficiently to return to work without further delay, and that his wage-earning capacity should not be less than before the accident.

Compensation was stopped, and work offered him by his employers.

He replied that he would "think it over," and nothing was heard of him until three weeks had elapsed, when an application for arbitration was issued. In an interview a few days later A S's solicitors admitted to the employer's representative that the applicant was not then under medical treatment. A small sum was offered in settlement of the claim, but A S persisted in his demand for £80.

Examination.—Six and a half months after the accident, when I was asked to examine A S on behalf of his employers, he told me that his shoulder had now wholly recovered, but that he was still unfit for work on account of the condition of his right wrist. The wrist was slightly twisted (the result of the fracture of ulna and radius), but this slight lateral displacement was insufficient to interfere with his working capacity. Although a certain amount of muscular wasting, due to disuse, was present in the right forearm, it was evident that he had been using his hands for ordinary work, because they were both equally dirty.

He was asked to turn the hand palm up, and then palm down, whilst at the same time I opposed movement, and in several other ways satisfied myself that the hand had wholly recovered. He complained that it got tired when he worked, but I pointed out to him that at first this must needs happen after a long period of idleness. To carry out his line of argument to its logical conclusion would involve never working again, if he had not sufficient pluck to endure a little inconvenience for the first few days. Finally, he told me that he had used his hand to paint two doors, but that it took him four hours, whereas in the ordinary way he would have finished in an hour. Upon pressing him, however, he admitted that he had not used the right hand at all whilst painting the doors.

In my report to the insurance company representing his employers I stated that the claimant was a lazy fellow, who had been taking advantage of his employers, that he was fit for work, and must certainly have been so for some months. This statement I was prepared to uphold in the witness-box at the arbitration proceedings.

Result.—A few days subsequent to my examination I was informed that the applicant, who had originally claimed £80, now indicated his willingness to accept about £2, and in these circumstances the legal advisers, on behalf of his employer, decided to pay this small sum rather than go to the expense of taking the case to court.

Defective sight following an accident calls for heavy damages, and great care and much patience must be exercised in all such cases. For a lad of tender years to deliberately and intentionally exaggerate slight loss of visual acuity must be somewhat unusual. The following case, occurring in the practice of the author, is of interest:—

A T, aged 13, had his right eye injured, the result of lime accidentally entering it. There was some disfigurement, but it did not amount to much, and was obviously, from the point of view of damages, insignificant. The lad complained, however, of loss of sight.

He was tested with different-sized letters. His left eye was covered, and he was asked to read with the right eye type of a certain size at a measured distance. Intuitively it was felt that he was pretending not to be able to read what he really could. At first he said he could only read at 20 feet what he should have been able to read at 80 feet—that is to say, he only read one-quarter of the normal range. After repeated examinations, which consisted in covering the right eye and getting him to read with the left, and then quickly covering the left and getting him to read with the right, at the same time constantly changing the test cards, he became confused, and, forgetting his part, he read letters which showed his vision had improved to one-third the normal range. It was now suggested that he could read even better still with a glass in front of his eye, to which he readily assented. With this he read half the normal range, but—the glass used was a *plain* one!

This was now pointed out to the lad himself and to his father, and they were told that it was obvious he was trying to deceive. He then read letters indicating that, in a single hour, the vision of the right eye had so improved that he could now read two-thirds of the normal range. No amount of coaxing could make him read better than this, nor could he. But this amount of vision (two-thirds the normal range) with one eye, and perfect vision in the other, is practically normal vision; indeed, the author frequently passes for service electric-car drivers who have no better vision than this. No doubt the accident had produced a mistiness of the fluid inside the eye, which had gradually cleared up. The lad had had at one time some defect of vision, but at the time of my examination it had practically disappeared. At the trial an ophthalmic surgeon gave evidence in his favour, and the jury awarded £25, which was fair, for there was some disfigurement, and he had suffered pain.

With monocular vision stereoscopic vision is lost. By means of an ordinary stereoscope it may be demonstrated with great certainty whether a patient is using one or both eyes. Most of the ordinary double photographs prepared for the stereoscope have a description of the photo printed at the bottom of one photo only—generally that opposite the right eye. This printed matter, when looked at through the stereoscope, is seen with the right eye only, and if, therefore, it is read, it proves that the right eye is not blind. Now, if the printed matter is covered over by means of a strip of paper, and the same or other words are written at the bottom of the photograph which is opposite the left eye, and the patient again reads the description, he sees also with his left eye.

A special stereoscopic picture has been prepared. Opposite the right eye there is a picture of a boy and opposite the left that of a man. These viewed through the stereoscope are seen separately if the eyes are closed alternately, but if looked at with both eyes the boy is seen on the man's back. The opportunity of catching out a malingerer with this device is obvious.

The difficulties in a case of hæmorrhage from the bowel are obvious. Hæmorrhoids and malignant disease should in all cases be carefully excluded. It is a common experience that a hæmorrhoid which has existed for years, and bled occasionally, is set down as the direct result of an accident. Bleeding from the bowel is one of the favourite pretences of the out-and-out malingerer. The following is an illustrative case:—

R. G. injured his ankle, and was on the sick-list for no less than 11 months, during the last four of which he was certainly capable of doing his work. His employer showed him every possible consideration, not only paid half wages (as compelled to do by law), but voluntarily arranged for efficient massage, offered light work, and in every way tried to encourage R. G. to return to work. At last the weekly payments were stopped, and arbitration proceedings followed, with the result that the county court judge made an award of a penny a week. His employer generously offered to give him not only work, but light work. This he did for three weeks, but work of any kind did not suit R. G. He had done no work for nearly a year, so he entered an infirmary, his alleged complaint being "hæmorrhage from the bowel." Soon after his admission blood was, in fact, found the first time he went to the water-closet; but the medical superintendent of the infirmary, evidently suspecting, ordered him white mixture, and gave instructions that he was to be kept absolutely in bed and the bed-pan to be used. No more hæmorrhage occurred, and upon his being suddenly confronted with me (I had seen him at intervals for a year, and given evidence against him at the trial some few weeks before) he at once left the infirmary. His employers again gave him work, and I am informed that he is at the present time doing satisfactorily the laborious work of drilling holes in iron girders, upon which he was engaged prior to the accident, and that he has been continuously at work, and has made no complaint of his foot or any other portion of his anatomy since his return.

The following letters, in large type, were found on the infirmary card which was placed at the head of his bed: F.I.V.C.P. Upon inquiry being made as to what these letters signified, it was explained by the medical officials of the institution that they had a special significance, and indicated a malingerer, in that they were the first letters of "Finds Infirmary Very Comfortable Place."

A good test for estimating alleged inability to close the fist is to ask the patient to bare his forearm and partially flex the fingers on the palm. The examiner then interlocks them with the fingers of his own hand, asking the examinee to close his first, thereby squeezing the examiner's fingers. It is now explained to him that an attempt is to be made to forcibly straighten his fingers, and that he is to resist the attempt. Not infrequently no attempt is made, and the fingers are straightened without any force whatever. If during the experiment the surgeon palpates the anterior surface of the forearm he may find that the flexor muscles are not being put into action, and that they remain, in fact, soft and flabby. Anyone who is only pretending to perform a certain muscular movement—say, of the hand or arm—and who, in fact, is really suppressing the movement, involuntarily throws into action the antagonistic set of muscles, and these can be felt to harden during the process.

It is a good plan at this stage to describe to the examinee the anatomical arrangements in very simple language, and to point out that one knows when he is not even attempting to close his fist from what one sees and feels taking place in the forearm. When the experiment is repeated the lesson has had its effect. In nine cases out of ten the malingerer resists, and after repeated experiments, accompanied by firm exhortation and a display of omniscience, the grasping power of the hand, as a rule, improves marvellously.

A summary of the best means of preventing malingering.—The principal means by which to check malingering may be briefly stated thus: (1) A system of organised lay-inspection; (2) repeated, periodical, independent medical supervision; (3) complete independence of the medical attendant; and (4) some system of registration which shall make apparent what is the full amount of sick-pay and other benefit, if any, that the patient is in receipt of.

OXFORD OPHTHALMOLOGICAL CONGRESS.—The Oxford Ophthalmological Congress will assemble at Keble College, Oxford, on Wednesday, July 16th next, and the meeting will be held on Thursday, July 17th, and Friday, July 18th. A discussion, to be opened by the Master of the Congress, Mr. Robert W. Doyne, will take place upon "The Present Position of Ophthalmology." Speakers are invited to send in their names to the Secretary. Members are reminded that cases and specimens are needed. If there is any demonstration that a member is willing to give, any operation that he cares to show, or any exhibition that he is desirous of making, he should notify as soon as possible Mr. Sydney Stephenson, honorary secretary to the congress, 33, Welbeck-street, London, W.

THE TREATMENT OF SYPHILIS WITH SALVARSAN:

FIRST 1000 CASES TREATED AT THE ROYAL NAVAL HOSPITAL AT PLYMOUTH.

BY LANCELOT KILROY, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. OXON.,

FLEET SURGEON, ROYAL NAVY.

HAVING now given salvarsan for some time at the Royal Naval Hospital, Plymouth, I think that short details of the first 1000 cases may be of general interest.

I have tried to mention all cases that have failed to give quite satisfactory results and have mentioned very few others. It is not pretended that I have managed to secure exact numbers of all cases of clinical or of Wassermann relapses that have occurred, but I have interrogated the Naval Hospitals at Haslar, Chatham, and Portland, and got details of one case from Haslar and of one from Portland. Relapses in ships I am ignorant of, with the exception of two cases, but at present I have no exact details.

Mercurial treatment is carried out in this hospital during the whole time the patient is an inmate. The only days on which mercury is not given are those on which the patients receive their injections of salvarsan.

No salvarsan has been given to cases of: (1) heart disease; (2) albuminuria; (3) diabetes; (4) advanced tabes; and (5) general paralysis of the insane. At least two doses are given to all cases unless some contra-indication presents itself. A third and more rarely a fourth dose is given to resistant cases.

On discharge from hospital a form is pinned to the man's medical history sheet with details of treatment and Wassermann reactions, &c. This form states that patients should continue mercurial treatment till a permanent negative Wassermann reaction is obtained; also that patients should be sent to hospital at the expiration of three and six months after discharge from hospital (date given) to have Wassermann reaction determined, or, that failing the patient, his blood should be sent. Should the Wassermann reaction fail to improve, more salvarsan is advocated.

2147 injections were given to these 1000 cases, the first injection on August 16th, 1911, and the last on Nov. 8th, 1912. No deaths have occurred. 17 cases received only one injection; 865 cases received two injections; 75, three injections; 40, four injections; and 3, five injections.

Cases Receiving One Injection.

17 cases received only one injection here under the circumstances given below. Of these—

One case had had one dose before admission. At the time of the second injection he had no active signs of syphilis.

One case had received two doses before admission and was suffering from a clinical relapse.

Two cases had had one dose each before admission and both had active signs of syphilis.

Seven cases did not wish for a second injection.

One case developed casts in his urine after his first dose and the second dose was withheld.

One case, aged 24, admitted on Jan. 15th, 1912; contracted syphilis in April, 1906. Had had two years mercury pill treatment and three years mercurial injections. He was admitted with laryngitis (Wassermann reaction positive on Jan. 16th, 1912). On Feb. 5th 0·5 grm. of salvarsan was given. He had a delayed reaction lasting four or five days with vomiting and some rise of temperature. Wassermann reaction negative on April 12th. As salvarsan had caused much constitutional disturbance, and as the Wassermann reaction was negative and the hoarseness practically unchanged, a second dose was withheld. Patient stated that his hoarseness was due to shouting at a boatrace, and that it came on before he contracted syphilis. He was discharged invalided on May 14th.

One case, aged 28, admitted on July 26th, 1912, with healing chancre, hard glands in groins, and rash. Contracted syphilis in May, 1912. Previous treatment three weeks mercury pills. Wassermann reaction weakly positive on July 7th. On August 1st 0·5 grm. salvarsan was given at 12.55 P.M. Temperature at 6.55 P.M. 101° F. On August 2nd the morning temperature was normal. At 10.55 A.M. the patient had a definite epileptiform fit (i.e., 22 hours after the salvarsan was administered). He was seen by me in this fit. He became conscious in five minutes. There was no further attack, and the temperature was normal that day (taken hourly). He gave a history of having had convulsions in childhood. On Sept. 12th he was discharged invalided, free from active signs of syphilis.

In view of his history of convulsions when a child it would not appear to be certain that his epileptiform seizure was due to salvarsan, though it is, of course, possible that it was so.

One case (an early one) cleared up with one dose and was allowed to go out without a second. He gave a negative Wassermann reaction on discharge.

One case, aged 21, developed persistent jaundice after the first dose, and the second was withheld. He contracted syphilis in March, 1911. Previous treatment mercurial injections. Admitted on Nov. 11th, 1911, with ulceration of the throat and tongue and rash. On Nov. 26th 0·5 grm. salvarsan was given. He then had scars of rash only, throat and tongue lesions having cleared up. On Dec. 8th he developed jaundice. He went to duty on Jan. 5th, 1912, having only just lost his icteric tinge. The Wassermann reaction had much improved when he went out, and he was free from active signs of syphilis.

Cases Receiving Two Injections.

865 cases received only two injections here. Of these—

One case had received one dose before admission and had a Wassermann relapse.

Two cases had received two doses each before admission, and were suffering, one from a clinical and the other from a Wassermann relapse.

One case had received one dose before admission. He had a negative Wassermann reaction, but was suffering from headaches, which cleared up after receiving two doses here.

One case had received two doses before admission and had active signs of syphilis.

Four cases had each received one dose before admission, and all had active signs of syphilis.

Six cases are still in hospital.

One case, aged 20, admitted on June 6th, 1912, with lip chancre and rash. He contracted syphilis in April, 1912. The Wassermann reaction was very strongly positive on June 21st. He went to duty on July 13th, having had two doses of salvarsan. I have just heard from Portland Hospital that he was admitted there on Nov. 11th with a clinical relapse: sore on glans, ulceration of scrotum, fauces, and anus, and a punched-out ulcer on the inner surface of the left thigh. He denied the possibility of re-infection. He had had only six mercurial injections since leaving this hospital.

One case, aged 22, contracted syphilis in December, 1911; admitted on Dec. 26th, 1911, with rash and ulceration of both tonsils. The Wassermann reaction was very strongly positive on Jan. 6th, 1912. Salvarsan was given on Jan. 25th and Feb. 3rd. He also received four mercurial injections and had had two before admission. He was discharged to duty on Feb. 6th. I have just heard from Haslar Hospital that he was admitted there on July 8th, with broken down sore at the base of the glans, in which spirochæta pallida was found, and extensive throat ulceration; Wassermann reaction very strongly positive. Patient said he had not been exposed to infection since salvarsan was given. He was given two doses of 0·6 grm. salvarsan at Haslar. The Wassermann reaction was negative on Nov. 1st.

10 cases were invalided:—

One case, aged 24, contracted syphilis in January, 1910. Had received one dose of salvarsan abroad and came home as a foreign invalid. A plate had been fitted to keep food out of a perforation in the hard palate. He went on leave on arrival in England. He was admitted on Sept. 29th, 1911, with pain in the roof of the mouth and ozæna. Wassermann reaction positive on Oct. 6th. On Oct. 5th, 1912, 0·5 grm. salvarsan was given and a second dose on Nov. 23rd. An autogenous streptococcus vaccine from organisms isolated from nasal discharge was tried unsuccessfully. On Nov. 26th bare bone was found in the nasal septum. He refused mercurial injections and all surgical treatment to his nose. Wassermann reaction negative on Nov. 30th and Dec. 2nd. He was invalided. It was considered that he had no active syphilis on discharge, but that he needed the removal of sequestra.

One case, aged 26, contracted syphilis in November, 1911. Previous treatment two mercurial injections. Admitted on Oct. 25th, 1911, with almost absolute deafness, increased knee-jerks and ankle clonus, and some rigidity. Wassermann reaction negative. On Nov. 22nd and Dec. 6th doses of salvarsan were given. His deafness was still almost absolute, but his general health had improved when he was discharged invalided on Jan. 10th, 1912.

One case, aged 26, admitted on Sept. 27th, 1911; contracted syphilis in April, 1911. Previous treatment mercurial injections. Wassermann reaction positive on Oct. 6th, 1911. Had a syphilitic history with increased knee-jerks and ankle clonus. He did not improve greatly after salvarsan given on Oct. 25th and Nov. 20th, 1911. He was discharged invalided on Jan. 9th, 1912.

One case, aged 25, admitted to surgical side on Sept. 11th, 1911; contracted syphilis in February, 1911. Previous treatment mercurial injections. Wassermann reaction positive on Oct. 6th, 1911. Had had hemiplegia. He was given salvarsan on Oct. 27th and Nov. 20th, and improved very greatly, so that there was hardly any sign of disease to be found. He was discharged invalided on Jan. 9th, 1912, and gave a negative Wassermann reaction.

One case, aged 25, admitted on Oct. 23rd, 1911; contracted syphilis in 1908. Previous treatment mercurial injections. Had had paraplegia of both legs. Wassermann reaction positive on Oct. 30th, 1911. He improved greatly after two doses of salvarsan given on Nov. 2nd and Nov. 20th, 1911, but not sufficiently to avoid invaliding. He was discharged on Jan. 9th, 1912.

One case, aged 22, admitted on Nov. 3rd, 1911; contracted syphilis in August, 1911. Previous treatment mercury pills. Wassermann reaction positive on Nov. 18th, 1911. He was admitted with absolute deafness, which was untouched by salvarsan given on Nov. 27th and Dec. 29th, 1911. He was discharged invalided on Jan. 9th, 1912.

One case, aged 25, admitted on Jan. 11th, 1912; contracted syphilis in December, 1911. Previous treatment mercury pills. On admission had marked rash and ulceration of tongue. There was also deafness, which had preceded and was not due to syphilis. Wassermann reaction positive on Jan. 16th, 1912. All symptoms except deafness cleared up after salvarsan given on Jan. 9th and Jan. 31st. He was discharged invalided on Feb. 13th, 1912. The Wassermann reaction had improved.

One case, aged 23, admitted on Nov. 30th, 1911; contracted syphilis in September, 1911. Previous treatment mercurial injections. He had increased knee-jerks and weakness in legs which did not improve after

salvarsan given on Dec. 7th and Dec. 15th, 1911. He was discharged invalided on March 9th, 1912. Wassermann reaction on Nov. 30th, 1911, Jan. 16th, 1912, Feb. 2nd, and Feb. 18th, 1912, decreasingly positive.

One case, aged 23, admitted Nov. 30th, 1911; contracted syphilis in January, 1908. Previous treatment two years' mercury. Wassermann reaction positive on Nov. 30th, 1911. Had rash and syphilitic disease of bones in nasal fossæ. The rash disappeared, but the ozæna persisted after two doses of salvarsan given on Dec. 7th and Dec. 15th, 1911. He was discharged invalided on March 12th, 1912.

One case, aged 20, admitted Jan. 4th, 1912; contracted syphilis in October, 1911. Previous treatment, two mercurial injections and 13 weeks mercury pills. On admission had secondary rash. Wassermann reaction positive on Jan. 7th, 1912. Salvarsan was given on Jan. 23rd and Feb. 3rd, 1912. On March 11th he was seen by me in an epileptic fit. He had had two epileptic fits previously while at home on leave before contracting syphilis in October, 1911. He was discharged invalided for his epilepsy on April 10th, 1912.

One man, who had been invalided out of the service, was resurveyed and readmitted into the service after treatment by two doses of salvarsan.

This man had been invalided on July 6th, 1911, for severe ulceration of the throat and ozæna of syphilitic origin. He contracted syphilis in April, 1911. Previous treatment, mercurial injections. Wassermann reaction positive on August 8th, 1911. He was losing weight and in a very unsatisfactory state. On August 19th 0·45 grm. of salvarsan was given intravenously. The hoarseness and ulceration of the pharynx and palate rapidly improved. On August 27th 0·5 grm. of salvarsan was given. On August 29th there was only a small ulcerated patch on the pharynx. On Sept. 10th, as he seemed fit for duty, a report was made to the Surgeon-General to that effect. A resurvey was ordered, and on Sept. 20th he was found free from all signs of syphilis and was sent to duty.

Cases Receiving Three Injections.

75 cases received three injections here. Of these—

Six cases that had had two doses each suffered clinical relapses and were given a further dose each.

One case that had had two doses here suffered a Wassermann relapse and came in for another dose.

One case that had had two doses came in with anal warts and a negative Wassermann reaction. He was given another dose as he requested it.

Five cases are still in hospital.

One case was invalided.

Aged 25, admitted on Feb. 2nd, 1912, with syphilis (primary and secondary) contracted in January, 1912. The Wassermann reaction was positive on Feb. 9th, 1912. The patient had had one mercurial injection before admission. He was given salvarsan on Feb. 12th and March 23rd. On March 26th he complained of dimness of vision. He had specific choroiditis of both eyes, more marked in the left. He refused a third dose of salvarsan and was brought forward for survey. The board recommended him for further hospital treatment. He then agreed to a third dose being given. On June 20th there was extensive choroiditis —V.R. 6/24, V.L. 6/18. He refused more salvarsan and was invalided on July 24th.

I consider that the case would have benefited by further treatment with salvarsan.

A case that had been invalided out of the service was resurveyed and readmitted into the service after two doses of salvarsan, and a third was then given.

This man, aged 18, was admitted on July 24th, 1912. He contracted syphilis in January, 1912, and was invalided on June 5th for intractable specific iritis. Wassermann reaction was positive on Sept. 2nd. On Sept. 6th, 14th, and 30th he was given doses of 0·5 grm. of salvarsan. On Sept. 27th he was resurveyed and found fit for readmission into the service. The third dose of salvarsan was given as a precaution. He went to duty on Nov. 2nd with normal vision.

Cases Receiving Four Injections.

40 cases received four injections here. Of these—

Fourteen cases who had had two doses suffered clinical relapses and were given two more doses after their relapses.

Twelve cases who had had two doses suffered Wassermann relapses and were given two more doses after readmission.

Two cases are still in hospital

One case, aged 22, contracted syphilis in January, 1911. Previous treatment, mercurial injections. Admitted on August 2nd, 1911, with rash, ulcers on legs, in mouth, and on tonsils. Wassermann reaction positive on August 26th. Salvarsan was given on Sept. 2nd and 14th. All symptoms had cleared up on Sept. 10th. Wassermann reaction positive on Sept. 12th. He was discharged to duty on Sept. 19th, after which he had mercurial injections till February, 1912, and then mercury pills. He was readmitted on March 8th with fresh sores on the penis contracted on March 1st, in which spirochæta pallida was demonstrated. On March 15th Wassermann reaction was very strongly positive. Salvarsan was given on March 18th and 31st. The chancres were healed on March 27th, and he went to duty on April 2nd. He was also given two mercurial injections while in hospital. Wassermann reaction was negative on May 21st.

This appears to be a case of reinfection, though treatment was not delayed long enough for secondary symptoms to appear. The ulcers were not on the site of his previous sores, and did not resemble gummata.

Eleven cases received four consecutive doses before discharge, and none of these so far have reached this hospital with relapses.

Cases Receiving Five Injections.

Three cases received five injections here. Of these—

One case received three doses and suffered a clinical relapse and was given two doses after his relapse.

One case was given two doses and suffered a clinical relapse and was given three doses after his relapse.

One case was given two doses and suffered a Wassermann relapse and was given three doses after readmission.

Reactions and Therapeutic Effects.

Three cases suffered from pain, stiffness, and swelling in the arm in which the injections were carried out, causing some loss of service through delay in discharge to duty, but no permanent damage. In one of these cases quite recently I feel quite confident that I injected 250 c.c. of the solution into the space between the vein and its sheath. The patient complained of no pain until many hours afterwards. He has returned to duty, but for some time there was cord-like thickening in the course of the vein extending almost to the axilla. The solution went in only fairly fast, and the patient was asked several times while the injection was proceeding whether he was quite comfortable and whether there was pain. There was nothing in his replies, nor in the look of the arm at the time, to cause any anxiety. I have not seen this accident of injecting into the vein sheath described before. The other two cases were slight.

As regards reactions, these have been on the whole very mild. Twice a temperature of 104·8° F. has been recorded. The great majority of cases showed no rise of temperature, but a good many reached 99°. A temperature of 102° was not very rare. Vomiting was fairly common. Rigors were rare. A few reactions were delayed till the next day, no reaction occurring on the day of the injection. Herxheimer reactions were not very common, and it is difficult to separate them from arsenic rashes, nor can I satisfy myself that they are more common in one particular type of case than in another, except that possibly florid early secondary cases provide them in greatest numbers.

As regards the effect of salvarsan therapeutically, the moister the lesion originally the more rapid is the effect of the drug. This is explainable on the hypothesis that the solution more abundantly bathes those parts that are most vascular. Very fibrous non-vascular tissues are resistant. Florid secondary syphilis gives the most dramatic results. Rupia also yields rapidly. "Clean" primary sores usually yield quickly. Lesions of the mouth and throat, also of the tongue, both secondary and tertiary, are usually very amenable.

Occasionally resistant ulcerations (particularly those of the pharynx) are met which improve up to a certain point, and then cease to improve only to yield to vaccine treatment. This is only to be expected, as salvarsan cannot be relied on to combat staphylococcus and streptococcus infections of ulcers primarily caused by spirochæta pallida.

Sometimes a case with well-marked polymorphic rash is seen, and the entire eruption is looked on as syphilitic. Salvarsan is given, and after one or two injections almost the whole rash is gone, but patches of eczema or some other type of rash are left. The residual rash usually needs vaccine treatment. Recently such a case presented itself. When the profuse rash cleared up, it left unchanged large patches of eczema on the forearms. It turned out that the patient had had this rash for years before he contracted syphilis. It yielded rapidly to an autogenous staphylococcus vaccine, the first dose of 50 millions causing such improvement the next day that the patient said that the rash had not been so well for years.

Method of Administration.

With regard to the method of administering salvarsan, Emery's apparatus is used with a special needle made of tantalum fixed in a modified McDonagh's holder supplied by Messrs. Allen and Hanbury. Tantalum, being harder than steel or platino-iridium, beats both in keeping its point. It is not subject to rust and is cheaper than platino-iridium.

Patients are prepared for salvarsan as for operation (diet, aperient, enema, &c.). They have no food for three hours before nor for four hours after the operation. Cases are not moved from their wards nor from their beds. The latter are wheeled near the tables on which the necessary equipment stands in the ward. A waterproof sheet, covered with a towel wrung out of 1 in 20 carbolic solution, is placed on the bed under the arm to be operated on. The operation area is cleaned with spirit soap and then with 1 in 1000 mercury biniodide solution.

As to pace, one operator can easily deal with 12 cases an

hour provided he has the very highly skilled assistants I am so fortunate as to possess, for pace depends on the smartness of one's assistants.

I have some practical experience of giving salvarsan with a syringe, and have read descriptions of various methods of administering the drug, but I am more than content with the method used here. I should utterly distrust my ability to give 21 intravenous injections in 1½ hours (as was done by me the other day) using any other apparatus than Emery's.

Having a battery of 36 complete outfits it is possible to give that number of intravenous injections without having to resterilise anything but needles. Our autoclave can deal with the apparatus for 30 cases in ten batches of assorted glassware. The sterilising basket is a cylinder 12 in. high by 8½ in. inside diameter.

Wassermann Reaction.

So far about 50 per cent. of the cases that have been examined after having had salvarsan have given a negative Wassermann when examined three months later. The others are about equally divided into those whose Wassermann is not improving or getting worse. It is too early for precise details.

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The modification of Wassermann reaction in use here is Fleming's, and (following Emery) quantitative tests are done by using graduated dilutions of antigen. Controls of normal blood are tested as a preliminary before doing any given series, and the dilution of antigen with which all normal bloods in controls just fail to give a positive reaction is determined for the antigen in use. Supposing the satisfactory dilution to be used to prove to be 1 in 15—

4 units of antigen diluted 1 in 15 ... ...
1 unit of patient's serum ... ...
} Incubated at 37° C. in water bath for 20 minutes.

To above is added 1 unit of a 5 per cent. emulsion of washed sheep's corpuscles, and the tube is incubated for a further 30 minutes in water bath as above. Three other tubes are put up for each blood.

One contains 4 units of 0·85 per cent. NaCl solution and 1 unit of patient's serum.

One contains 4 units of antigen diluted 1 in 30 and 1 unit of patient's serum.

One contains 4 units of antigen diluted 1 in 60 and 1 unit of patient's serum.

The washed sheep's corpuscles are added in the usual manner. Readings can vary from $\begin{matrix}+&+&+\\+&+&+\end{matrix}$ to $-\ -\ -$, the dilutions of antigen used, of course, being stated.

It is found that by washing the sheep's corpuscles six times, thrice with citrated saline and then thrice with 0·85 per cent. saline, and by taking the blood from the patient on the morning of the test, a very small percentage of bloods fail to give a readable result.

Summary.

2147 injections were given to 1000 cases with 13 invalidings, no deaths, and 22 clinical relapses re-admitted to this hospital, 2 clinical relapses admitted to other naval hospitals, and 2 occurring in ships.

Leaving out of consideration the salvarsan given after relapses—

Of 17 cases (5 of whom had previously received salvarsan elsewhere) who received one dose of salvarsan here, no case has reached this hospital as a clinical relapse.

Of 901 cases receiving two injections here, 21 cases have reached this hospital as relapses, 2 are known to have occurred in ships, and 2 have been treated in other naval hospitals.

Of 68 cases receiving three injections here, one case has reached this hospital as a clinical relapse.

Of 14 cases receiving four injections here, no case has reached this hospital as a clinical relapse. One case of relapse after two doses given elsewhere has been treated here by two further doses.

A CASE OF SUPPURATIVE POST-TYPHOID OSTEITIS 13 YEARS AFTER AN ATTACK OF ENTERIC FEVER.

BY A. H. TUBBY, M.S. LOND., F.R.C.S. ENG.,
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THE comparative rarity of suppurative osteitis after enteric fever (most authorities give 2 per cent.), the unusual situation of the abscess (viz., the forearm), and the length of time the bacilli had lain dormant (i.e., 13 years), have led us to consider this case worthy of record.

The patient, a male, aged 25 years, was admitted to the hospital in April, 1912, complaining that three weeks ago he noticed pain in the right forearm, and a week after that some swelling and tenderness near the elbow, which later extended downwards to the hand. Pain was also felt in the axilla and shoulder. He applied "poultices," which caused some diminution of the swelling. When examined he was found to have a hard, tender swelling on the inner aspect of the two-thirds of the right forearm. The swelling was in connexion with, and fixed to, the deeper structures [illegible] the skin. There was considerable œdema of the [illegible] tissues extending down to the wrist. The temperature was 99·4° F. On further inquiry it was elicited that [illegible] he had an attack of enteric fever, and a diagnosis of typhoid suppurative osteitis of the ulna was made. The presence of osteitis in the upper third of the ulna was marked rarefaction was confirmed by a skiagram by Mr. E. S. Worrall. As the case did not then require operation was deferred till the usual operating day. 36 hours after one of us had seen him the temperature suddenly rose to 104°, and in our absence Mr. Arthur Carling operated on the case. Pus was found between the skin leading down to the posterior aspect of the ulna, bone was scraped, and a counter opening made on the [illegible] side. The patient made a slow but uneventful recovery.

During the man's stay in the hospital several interesting clinico-pathological investigations were carried out by one of us (J.A.B.H.). A leucocyte count, taken on admission, showed no leucocytosis, and a Widal's agglutination reaction with the patient's serum and three different strains of bacillus typhosus was negative in a 1 in 20 dilution of the patient's serum after one hour, though controls readily agglutinated in a 1 in 200 dilution. Agglutination reactions with the paratyphoid group were also negative. The pus from the wound contained in pure culture a bacillus giving all the cultural reactions of B. typhosus, and this bacillus was also agglutinated by a known typho-agglutinating serum and fixed complement in the presence of a "typho-immune" serum. B. typhosus rapidly disappeared from the discharge from the wound and could not be found a week after the operation. The urine and fæces were examined for the presence of B. typhosus with negative results. The patient's serum would not agglutinate this bacillus (B. typhosus) obtained from the wound, but emulsions of the bacillus and other strains of B. typhosus were able to fix complement in the presence of the patient's serum. Complement fixation experiments with the other bacteria and the patient's serum gave negative results. This property of the patient's serum to "fix complement" but not "agglutinate" in the presence of its "own" B. typhosus or of foreign strains is an extremely interesting one; but to discuss it further in a clinical account seems to us to be out of place.

The Clinical Laboratory, Westminster Hospital, S.W.

PROGERIA AND ATELEIOSIS.[1]

BY ARTHUR KEITH, LL.D., M.D. ABERD., F.R.C.S. ENG.,
CONSERVATOR OF THE MUSEUM AND HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

IN 1897 Mr. Hastings Gilford, of Reading, described a very remarkable condition or disease in a boy to which he gave in 1904 the name of progeria (*πρόγηρος*, prematurely old). By his kind permission I am enabled to reproduce here a photograph of his first case. (Fig. 1.) The photograph represents a boy of very peculiar appearance, 17 years of age (he died at the age of 18). His stature was only 1130 mm. (3 ft. 8½ in.), the height of a normal boy of 7; his weight was only 16 kg. (35·2 lb.). So representative is this of other cases since recognised that the illustration is sufficient to guide any one to the recognition of the condition described as progeria. In coming to the conclusion that the boy shown in Fig. 1 represented an unrecognised pathological state, Mr. Gilford was assisted by a case described by Sir Jonathan Hutchinson[2] in 1886 under the descriptive title of "Congenital absence of hair and mammary glands, with atrophic condition of the skin and its appendages in a boy whose [illegible] been almost [illegible]ecia areata [illegible]ix." So [illegible]d boy [illegible]n the [illegible]han [illegible]the [illegible]d's [illegible]as [illegible]ph [illegible]10 [illegible]M. [illegible]au, [illegible]e of [illegible]atical [illegible] case— [illegible] of "Le [illegible]énile (Pro- [illegible]ord)."[4]

FIG. 1.

Mr. Gilford's case of progeria. A boy aged 17, 3 feet 8½ inches in stature, hair grey, skin wrinkled, stooping posture, and characteristic appearance (from "Disorders of Post-Natal Growth and Development," 1911).

Progeria,[3] as defined by Mr. Gilford, does not occur in normal children; it only affects those who are the subjects of a form of delayed or arrested growth—infantilism. Progeria is thus a double condition: (1) the body is arrested or delayed in its growth; and (2) it becomes prematurely the subject of senile changes. Infantilism and senilism are both present in the same body at the same time. Progerians pass from a delayed childhood into a premature old age. Mr. Gilford, in his recent work, cites a case which illustrates the acceleration of age changes to a remarkable degree. In eight months a St. Louis baby had reached that stage of development of the head and face usually attained by men between 40 and 50 years of age; in this case the individual appears to have passed in the short space of eight months to an imperfect state of manhood.

I have two reasons for calling attention to progeria. The first is to see if it is so rare a condition as is supposed; it is not unlikely, when men in active practice become acquainted with the very definite characters of the disorder, that further cases will be recognised and additional light thrown on the exact nature of what is clearly an instructive disease. My chief reason, however, is to describe the changes in the skeleton of a lad who died at the age of 18 and was recognised as manifesting the typical features of progeria. The skeleton has been added recently to the Museum of the Royal College of Surgeons, and affords us an opportunity of becoming acquainted with the peculiar and characteristic skeletal changes to be seen in cases of progeria.

Characters of the skull.—It will be unnecessary to describe these at length because Figs. 2, 3, and 4 give accurate representations of both the internal and external characters of the skull, as seen in side view, front view, and top view. The plane of orientation and the exact scale are shown on the figures so that any measurement desired may be obtained from them. The condition of the sutures and fontanelles is also shown. A glance at Figs. 2 and 3 will show at once that while the brain-case is nearly of normal size the facial part of the skull has been arrested in its development and growth; it is infantile in its dimensions. The outstanding features of the head are those which depend on arrested or delayed growth, but an arrest which is more profound than is known to occur in any other disease.

Cranial cavity and brain case.—The skull, from a functional point of view, falls into three parts: (1) the cranial walls moulded on the brain and designed to protect the brain; (2) the facial parts and apparatus of mastication; and (3) the parts modified for the fixation of the skull to the body. That is the order in which I propose to describe the various cranial changes which are to be seen in progeria. In the present case there was a peculiar attitude of mind, but the patient was not mentally deficient. The cranial capacity is in keeping with the observation made in life; it measures 1250 c.c., which, although over 200 c.c. below the average capacity of English lads of 18, is yet as large as in many boys of good mental capacity. The maximum length of the skull is 166 mm. The bones of the skull are so thin that the actual length of the cranial cavity is 162·5 mm., the thickness of the frontal and occipital walls having only a combined measurement of 3·5 mm., about one-fourth of the normal amount. The total length is less than we should expect—a result, as we shall see, of the delayed growth of the base and facial

[1] Demonstration at the Royal College of Surgeons of England on Oct. 18th, 1912.

[2] The clinical features of the disease and an explanation of its nature are given in Mr. Gilford's sterling work, "The Disorders of Post-Natal Growth and Development." Adlard, 1911.

[3] Medico-Chirurgical Transactions, 1886, vol. lxix., p. 474.

[4] Le Clinique Infantile, 1910, vol. viii., p. 705.

[5] In the Zeitschrift für Ethnologie, 1912, vol. xliv., p. 592, a peculiar ancient Peruvian skull is described by Professor von Luschan and Dr. Dieck. This skull undoubtedly illustrates a lesser degree of the condition described here as progeria.

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Progeria,[5] as defined by Mr. Gilford, does not occur in normal children; it only affects those who are the subjects of a form of delayed or arrested growth—infantilism. Progeria is thus a double condition: (1) the body is arrested or delayed in its growth; and (2) it becomes prematurely the subject of senile changes. Infantilism and senilism are both present in the same body at the same time. Progerians pass from a delayed childhood into a premature old age. Mr. Gilford, in his recent work, cites a case which illustrates the acceleration of age changes to a remarkable degree. In eight months a St. Louis baby had reached that stage of development of the head and face usually attained by men between 40 and 50 years of age; in this case the individual appears to have passed in the short space of eight months to an imperfect state of manhood.

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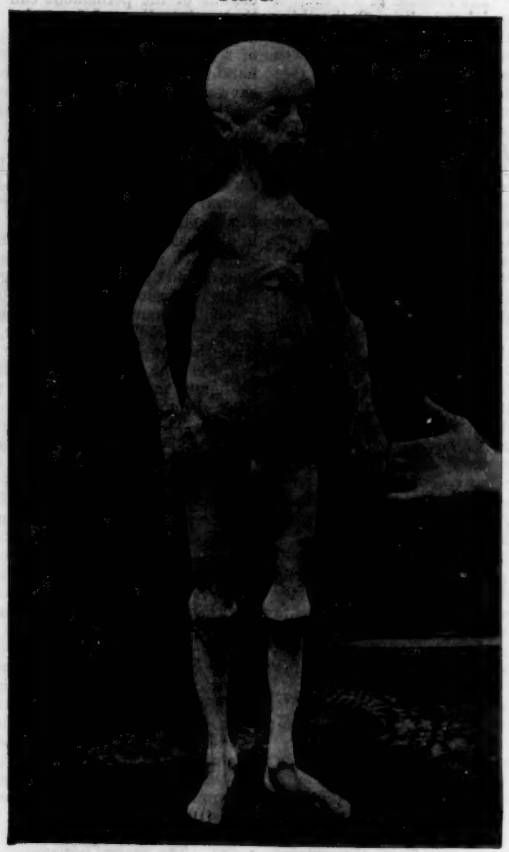
FIG. 1.



Mr. Gilford's case of progeria. A boy aged 17, 3 feet 8½ inches in stature, hair grey, skin wrinkled, stooping posture, and characteristic appearance (from "Disorders of Post-Natal Growth and Development," 1911).

Characters of the skull.—It will be unnecessary to describe these at length because Figs. 2, 3, and 4 give accurate representations of both the internal and external characters of the skull, as seen in side view, front view, and top view. The plane of orientation and the exact scale are shown on the figures so that any measurement desired may be obtained from them. The condition of the sutures and fontanelles is also shown. A glance at Figs. 2 and 3 will show at once that while the brain-case is nearly of normal size the facial part of the skull has been arrested in its development and growth; it is infantile in its dimensions. The outstanding features of the head are those which depend on arrested or delayed growth, but an arrest which is more profound than is known to occur in any other disease.

Cranial cavity and brain case.—The skull, from a functional point of view, falls into three parts: (1) the cranial walls moulded on the brain and designed to protect the brain; (2) the facial parts and apparatus of mastication; and (3) the parts modified for the fixation of the skull to the body. That is the order in which I propose to describe the various cranial changes which are to be seen in progeria. In the present case there was a peculiar attitude of mind, but the patient was not mentally deficient. The cranial capacity is in keeping with the observation made in life; it measures 1250 c.c., which, although over 200 c.c. below the average capacity of English lads of 18, is yet as large as in many boys of good mental capacity. The maximum length of the skull is 166 mm. The bones of the skull are so thin that the actual length of the cranial cavity is 162·5 mm., the thickness of the frontal and occipital walls having only a combined measurement of 3·5 mm., about one-fourth of the normal amount. The total length is less than we should expect—a result, as we shall see, of the delayed growth of the base and facial

[1] Demonstration at the Royal College of Surgeons of England on Oct. 18th, 1912.

[2] The clinical features of the disease and an explanation of its nature are given in Mr. Gilford's sterling work, "The Disorders of Post-Natal Growth and Development." Adlard, 1911.

[3] Medico-Chirurgical Transactions, 1886, vol. lxix., p. 474.

[4] Le Clinique Infantile, 1910, vol. viii., p. 705.

[5] In the Zeitschrift für Ethnologie, 1912, vol. xliv., p. 592, a peculiar ancient Peruvian skull is described by Professor von Luschan and Dr. Dieck. This skull undoubtedly illustrates a lesser degree of the condition described here as progeria.

part of the skull. The brain, however, has apparently gained the necessary space by expanding laterally (see Fig. 3), and hence the skull is wide, its width being 84·3 per cent. of the length. The maximum width is 140 mm., the thickness of the lateral cranial wall on each side being only 2 mm. The shape of the cranial case has also been affected by a premature obliteration of the lambdoid suture (see Fig. 2), and of the suture between the frontal and great wing of the sphenoid. The suture between the great wing and the malar is also synostosed. One effect of the delayed growth of the cranio-facial base and of the premature closure of these sutures is that the brain has expanded the posterior part of the skull, especially where the parietal, occipital, and mastoid regions meet. In that region there is a large fontanelle bounded by thin and exceedingly delicate bone. The external auditory meatus has, owing to the posterior expansion of the skull, come to be situated in front of the mid-point of the antero-posterior axis of the head. The height of the vault of the skull above the ear holes is only 110 mm., about 15 mm. less than is to be expected in a normal head. The lowness of the vault is due (1) to the relatively small cranial capacity; (2) the thinness of the parietal bones at the vault (1·5 mm.); and (3) to the complete arrest in the downward and outward growth of the auditory meatus; the region of the mastoid (see Fig. 2) has proceeded very little beyond the stage reached at birth. In progeria the brain, although distinctly below the average size, is not small, but the cranial walls are exceedingly thin, and there is some irregularity in shape owing to premature synostosis of certain sutures. In life there was a considerable degree of asymmetry observed when the head was viewed from above; the normal prominence of the left occipital was exaggerated. The skull shows still a considerable asymmetry from above (Fig. 4), but to a less degree than was observed in life.

Facial and masticatory part of the skull.—It is very apparent from Figs. 2 and 3 that there has been a profound arrest of growth of the face and of all those parts which are concerned in mastication. By the eighteenth year the face should be rapidly attaining its mature size; the deficiency in the present case is shown in Fig. 5, where a profile of a typical English skull is contrasted with progeria on the one hand and with acromegaly on the other. In the one case (progeria) there is an arrest of growth in the facial parts; in acromegaly there is an overgrowth; yet the difference in age between the patients suffering from these two extreme conditions was only four years. The total length of the progerian face from nasion to chin is only 84 mm. (normal 110–120 mm.); the length of the upper face—from nasion to the alveolar point—45 mm., about 15–20 mm. too small. The width of the face—from one zygomatic arch to the other—is only 92 mm. in place of 110–120 mm.; the width between the masseteric tubercles of the malars is only 54 mm., 20 mm. less than is usual. Those measurements illustrate the marked arrest of growth in the face. The condition of the air sinuses is even more significant. The maxillary sinus is no larger than at birth; the roots of the molar teeth appear in the floor of the orbit. The frontal, ethmoidal and sphenoidal sinuses, which ought at the eighteenth year to have attained very considerable dimensions, are still unformed.

Palate and upper teeth.—The condition of the palate, a very remarkable one, is shown in Fig. 6. There is a profound arrest of growth; the permanent teeth are struggling to find room on a palate which is very little larger than the palate of a child at birth. The palatal area bounded by the teeth is narrow and vaulted. At the age of 18 the palatal space (within the teeth) should have an area of 950 mm.^{2}; in progeria it is only 410 mm.^{2} Between the first premolars it forms merely a groove 5·5 mm. wide; in a normal boy the width should be about 30 mm. In its length the palate is less reduced than in its width. The length measured from the alveolar border, between the central incisors, to the mid-point of a line uniting the posterior borders of the second molar teeth, measures 33·5 mm.—about 8 mm. less than normal. The nasopalatine foramina are open, and the bones of the palate are thin and fragile. The dimensions of the palate and teeth are accurately shown in Fig. 6.

Although the growth of the palate is so delayed, the teeth, irregular in position and distorted, are quite as advanced in formation and eruption as we expect to find in a youth of 18. The upper central incisors, peculiarly bent (see Fig. 2), are in place; their roots are very short, and the crown of the left is almost destroyed by caries. The first and second premolars have erupted. The first have appeared on the lingual sides of the persistent first milk molars; the second permanent premolars have come through behind their normal position and have rotated, so that the anterior interdental surface of the crown is turned towards the tongue. The first and second permanent molars are struggling into place, but the process of eruption has been so irregular that the grinding surface of the first molar abuts against the anterior side of the crown of the second molar. (Fig. 6.) The crowns of these two molars are firmly fixed together, and scarcely rise above the level of the alveolar border. The pressure of the first molar has caused the roots of the second molar to become sharply bent at their junction with the crown. The third permanent molars have not been formed; no trace of these teeth could be seen. Apparently the upper lateral incisors were never formed; their place is taken by persistent lateral milk incisors. Still embedded in the alveolus and lying inside the lateral milk incisors are the crowns of the permanent canine teeth. They lie obliquely, their points directed forwards. Thus while the palate is no larger than that of a child of two years, the teeth, in point of formation, and also eruption, are not markedly behindhand. The absence of the lateral incisors and wisdom teeth shows that there has been an arrest in dental development, but the chief of the dental irregularities must be attributed to the disturbed growth of the palate and upper jaws.

Mandible and lower teeth.—In Fig. 7 is given an exact drawing of the mandible and teeth—viewed from above, in natural size; the mandible is represented in true profile in Fig. 2, one half natural size. It will be seen that although in dimensions the mandible exceeds that of the newly born child, yet it has retained the infantile configuration to a remarkable degree. At first sight one is inclined to explain all its characters as the result of an arrest of growth. The ascending ramus is not developed; the coronoid processes are flush with the alveolar border, and the condyles lie in line with the lower border of the body of the mandible (see Fig. 2). The symphysis has larger dimensions than at birth; its height measures 16·5 mm.; its thickness, from front to back, 10 mm. The width from the outer border of one condyle to the outer border of the other is 78 mm.—much greater than at birth. There is a certain degree of asymmetry (see Fig. 7), the right condylar and coronoid processes being less developed than on the left side. The condyles, as may be seen from Fig. 7, are remarkably small. In life the patient found difficulty in opening the mouth, the range of mandibular movements being limited. The lingual or intra-alveolar area of the palate, we have seen, was very small, but the corresponding area between the lower teeth is not reduced to a corresponding extent. The non-development of the ascending ramus of the mandible is correlated with the non-expansion of the maxillary antrum and arrest in vertical growth of the upper jaws. The mandible, as may be seen from Fig. 2, occupies an oblique position on the face, passing in a straight line from a feebly developed chin towards an equally reduced auditory meatus. In shape the mandible represents a condition of infantilism, and yet there are certain features present which are not to be seen in the jaw at birth.

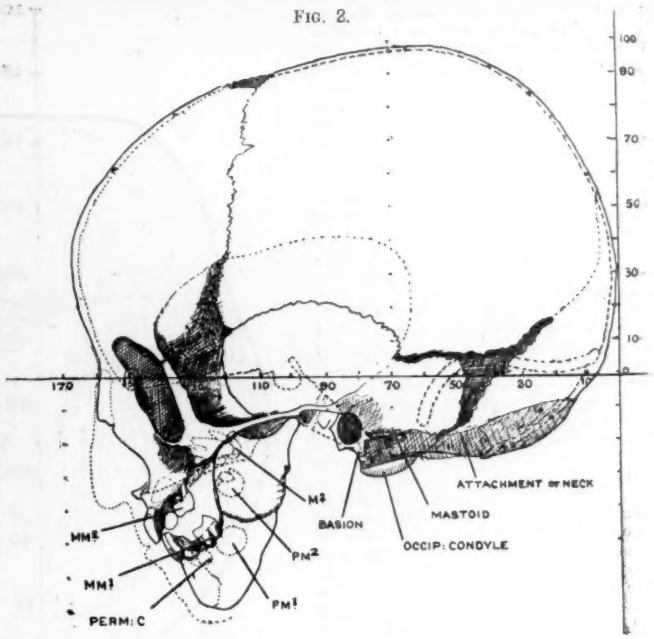
The condition of the lower teeth is represented in Fig. 7. The milk teeth on the right side have been destroyed by caries, with the exception of the first molar. The first permanent molars have also been destroyed by caries. The central permanent incisors are in place, sloping backwards, as shown in Fig. 7, owing to the oblique manner in which the mandible is set as regards the face. On each side of the central incisors are two teeth which are apparently the permanent canines (Fig. 7), the lateral incisors being congenitally absent, as is also the case in the upper jaw. Outside the canines and imbedded within the jaw in an oblique position are the permanent first premolar teeth; much further back (see Fig. 7) are the unerupted crowns of the second premolars. The first permanent molars have been destroyed by caries, after coming into use. The second permanent molars are erupting from the inner aspect of the coronoid processes—the grinding surfaces of the crowns looking inwards. The roots of these teeth (see Fig. 7) are formed, although the crowns lie in the alveolus. There is no trace of formation of third molars. Thus, although the mandible is infantile in form the teeth have reached a

stage in eruption corresponding to about the eighteenth year.

Other parts of the masticatory system.—The undeveloped condition of the face, palate, and mandible has been mentioned, but there still remain certain other parts of the masticatory system which require description. The zygomatic arches (Fig. 2) form slender bars of bone, only 2·5 mm. in depth, and so fragile that one must infer an equally undeveloped condition for the masseter muscle. The temporo-mandibular joint retains the infantile form. There is no articular eminence, no glenoid cavity, merely a flat articular surface. The condyle of the mandible is little larger than at birth. The tympanic plate which is developed to complete the temporo-maxillary joint behind—it is a part of the structures concerned in mastication—also retains the ring form seen in infancy. The temporal muscles were also exceedingly feebly developed. The extent of their attachment is indicated by the temporal lines; as the muscles grow and expand on the sides of the skull, the temporal lines ascend at the growing border of the muscles. By the eighteenth year the temporal lines should have ascended to a point about 75 mm. above the upper margin of the posterior part of the zygoma; in the case of progeria the temporal lines lie only 55 mm. above the root of the zygoma.

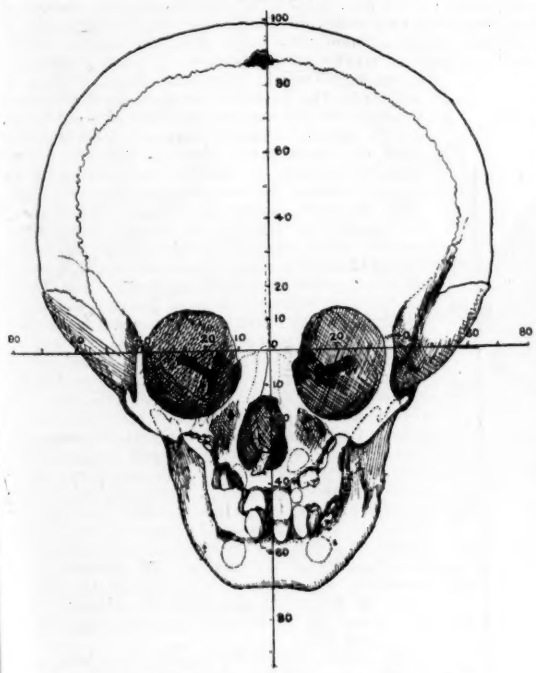
With the eruption of the permanent teeth, the growth of the jaws, and of the muscles of mastication, certain well-known changes occur on the forehead which strengthen the bony scaffolding of the face. The frontal sinuses enter and

FIG. 2.



Profile of skull. The interior of the skull, with pituitary fossa, is represented by a stippled line. M M¹, M M², first and second milk molars. P M¹, P M², first and second premolars. Perm. c, Permanent canine. M², Second permanent molar behind the first permanent molar. The obliterated sutures are also represented by stippled lines.

FIG. 3.



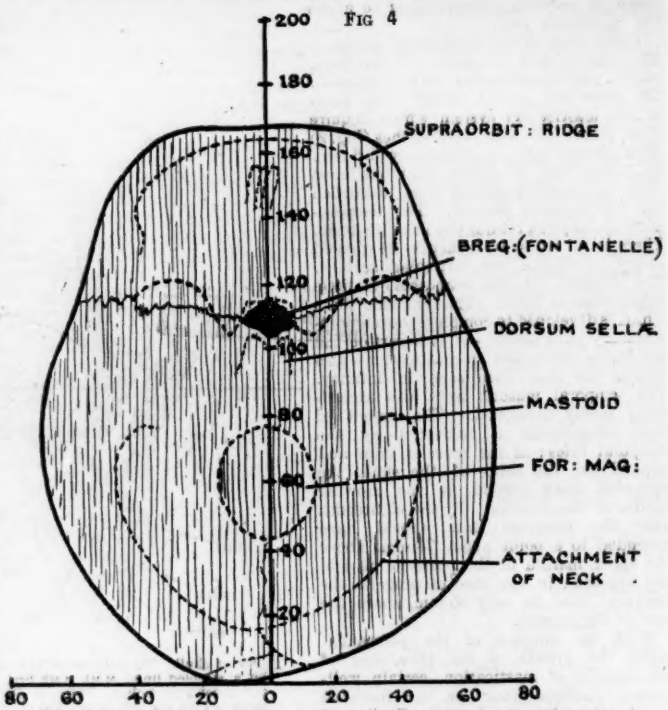
The skull of progeria seen from the front. The lateral expansion of the cerebral part, the arrest of growth of the facial and of the mastoid regions is apparent.

inflate the supranasal region of the frontal; the supraciliary eminences appear; the supra-orbital ridges and external angular processes are formed. In progeria the development of all these features is arrested. The most projecting part of the forehead is above in the region of the frontal eminences; the lower part of the forehead is retracted, smooth, finely moulded, and retains the characters of infancy. The width of the forehead from one temporal line to another is 86 mm., about 8 mm. less than we expect to find in crania of normal youths. In a normal lad of 18 the width of the forehead, from one external angular process to another of the frontal, should be 95–100 mm.; here it measures only 77·5 mm. Thus all the parts of the skull concerned in mastication are markedly arrested in growth. The walls of the alimentary canal were observed to be thin and atrophied when an examination was made immediately after death.

Fixation of the skull to the neck.—It is well known that the occipital region of the skull undergoes a number of changes in form and size during the years of adolescence. The neck grows when the brain has ceased to expand; the head becomes more deeply set in the neck as youth passes into manhood. In progeria none of these changes occur; the occipital region of the skull retains all its infantile features. The mastoid processes are entirely undeveloped; they are represented by mere rough lines on the outer borders of the digastric fossæ. The occipital curved lines and inion are equally infantile in type. The bimastoid diameter—which represents the width of the neck—is only 87 mm. in extent—fully 20 mm. less then is to be expected. The external auditory meatus is also infantile in form. The occipital condyles are small and flat; they measure 18 × 8 mm. The foramen magnum is spacious, measuring 36 mm. (antero-posterior) by 32 mm. (width). The large size of the foramen magnum is due to the persistence of the occipital fontanelle at its posterior margin. The large foramen is really an infantile character. Associated with the unfilled condition of the occipital fontanelle is the partial absence of the posterior arch of the atlas.

Pituitary fossa.—The pituitary fossa is peculiar in shape and smaller than is usual. The dorsum sellæ and posterior clinoid processes are so developed that they overhang the pituitary fossa, almost reaching the anterior clinoid processes and leaving a passage, only 5 mm. in its antero-posterior diameter, for the transmission of the infundibulum of the pituitary. The antero-posterior diameter of the pituitary fossa itself is 9 mm., its width 14 mm., its depth, measured from the level of the upper edge of the dorsum sellæ, 6·5 mm. All of these measurements are below the normal, and yet not so much that one can say definitely that the pituitary was pathologically small in this case of progeria. We have seen how markedly the face had been arrested in its growth; the cranial axis, on which the face is implanted, is also arrested in its growth, and it might be suspected that the slight reduction in the size of the pituitary fossa is due to the general arrest of the cranial base. In achondroplasia the cranial base is arrested in its growth and the pituitary fossa is small. I do not think that a reduction in the size of the pituitary can be explained in this manner. We have seen that the brain obtained by its growth the expansion of skull required for its accommodation. In cases of acromegaly we see pituitary tumours expanding the pituitary fossa to a large size; we have no reason to think that in progeria and achondroplasia the growing pituitary would fail to obtain such space as it required. The mere fact that bony processes became developed in the roof of the pituitary fossa seems to show that there was no energy of growth in the pituitary, no tendency to expansion.

FIG. 4

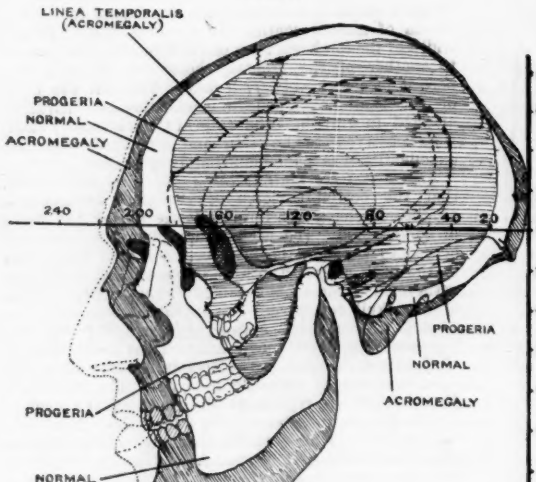


View of the skull from above (half natural size). The attachment of the neck, the foramen magnum, the pituitary fossa, and supraorbital ridges are also indicated.

Infantile and senile characters of the skull.—A survey of the various peculiar features of the skull shows that nearly all of them may be regarded as indicating a persistence of an infantile condition. That is especially true of all the features of the forehead, face, and jaws, of the temporal, mastoid, and occipital regions. The thinness of the cranial walls (0·5–2 mm. thick), the almost complete absence of diploë in their structure, the persistence of a fontanelle at the bregma (20 mm. wide by 15 mm. from back to front), the large fontanelle at the asterion—a fœtal character—measuring 60 mm. in its irregular length by 10 mm. in width (see Fig. 2), and the persistence of the suture between the basi-occipital and basi-sphenoid bones, are all fœtal or infantile characters. On the other hand, the cranial cavity, although below the normal capacity, cannot be regarded as arrested in its growth—at least not to a pathological extent. Thus, while the great majority of the cranial features may be regarded as infantile in nature, there are a number which cannot be regarded in this sense. The closure of sutures between adjacent bones is usually regarded as a senile character. The cranial sutural lines represent lines of growth—at least of potential growth; their closure in youth is certainly pathological, if not senile, in nature. In progeria the following sutures are closed: the greater part of the lambdoid (see Fig. 2); the sagittal (see Fig. 4); spheno-frontal; spheno-malar; temporo-malar. The coronal and temporo-parietal and temporo-occipital sutures were freely open and infantile in character. The other sutures prematurely closed are (see Figs. 2 and 3): fronto-maxillary; naso-maxillary; naso-frontal; fronto-lacrymal; fronto-ethmoid; malo-maxillary; and two already mentioned, spheno-malar and temporo-malar. The parts of the occipital bone were united and the synchondrosis between the basilar plates of the occipital and sphenoid bones remained open. The outer surface of the tabular bones of the skull show shallow dimplings and elevations, due to irregular deposit or growth on their outer tables.

The asymmetry of the mandible has been mentioned; there was also asymmetry of the nose (see Fig. 3). The nasal bones are relatively large and diverge to the right; the vertical plate of the ethmoid projects prominently from the nasal

FIG. 5.



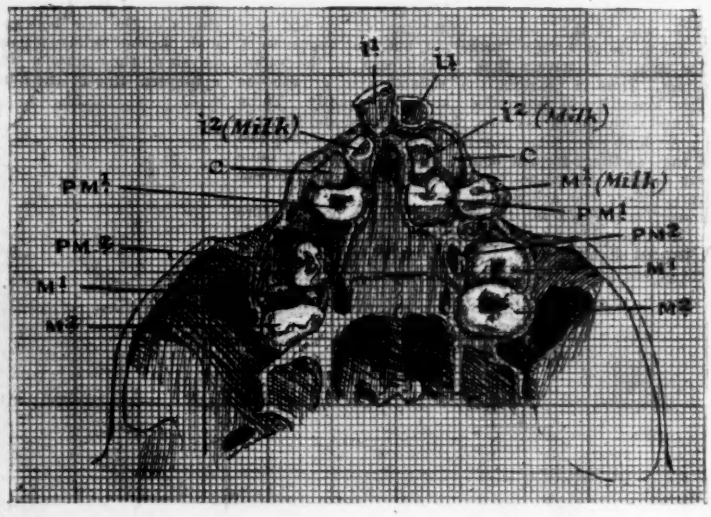
Superimposed profile drawings of three skulls: (1) progeria, (2) normal English male; (3) O'Brian (acromegalic giant aged 22). It is apparent from this figure that progeria and acromegaly represent opposite conditions (3/10ths natural size).

aperture and is bent with its convexity towards the right. The intranasal parts—turbinate processes—are small but normally developed. The height of the nose is 36 mm.; the width of the aperture 16·5 mm. The orbits, in conformity with the face, are high compared with their width. Their height is 35 mm., width 31 mm.

If one sums up the features of the skull the great majority must be regarded as a result of an arrest of growth, but there remain a small number which seem to indicate senility, at least prematurity.

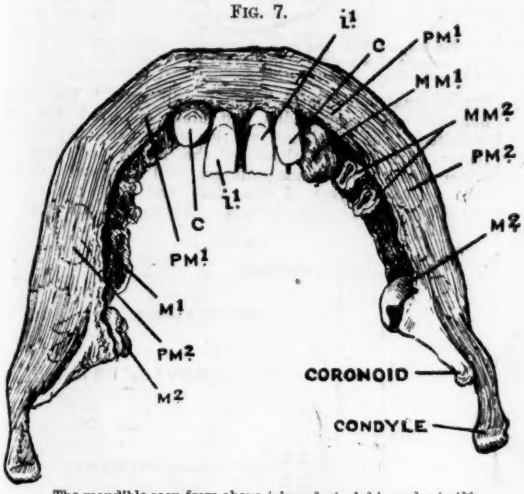
Bodily proportions.—So far only the skull has been described; it is now proposed to give an account of the skeleton. In certain forms of dwarfism such as achondroplasia, some parts of the body and limbs are much more reduced than others; in acromegaly some bones or parts of bones are affected more than others. In progeria all the parts connected with the thorax and with respiration are reduced; in acromegaly the same parts are greatly hypertrophied. The length of the clavicle is correlated with the width and strength of the chest—the greater the development of the chest the longer the clavicle. In the case of progeria the length of the clavicle was measured during the post-mortem examination and found to be 55 mm.; the length of the clavicle in a lad of 18 (R. C. S., No. 28.1) is 126 mm.; the clavicle in this case of progeria is 43·6 per cent. of the normal length (see Fig. 8). Comparing the seventh pair of ribs—of the skeleton of the normal boy of 18 with that of progeria—each rib, measured along its curvature, is 275 mm. in the normal and only 150 mm. in progeria; in length the latter is only 54·5 per cent. of the normal. The upper ribs are even reduced to a greater extent. In progeria intracartilaginous ossification is not disturbed to the same extent as intramembranous ossification, yet both are affected. As will be seen from Fig. 8, the cartilage-formed part of the clavicle is very distinctly demarcated from the membrane-formed portion. We should expect the membrane-formed clavicle to be more affected than the cartilage-formed ribs. A comparison of the femur with the normal is shown in Fig. 9. The standing height of the progerian right femur is 298 mm.; in the normal lad it is 416 mm., the first being thus 71·8 per cent. of the normal. The femur is thus less affected than the clavicle or ribs. The length of the tibia in the normal lad is 332 mm., in the abnormal 230, being thus 81 per cent. of the normal and less affected than the femur. The os calcis—a purely intracartilaginous-formed bone—had a total length in the normal of 69 mm., in the abnormal 55 mm., being 80 per cent. of the normal. The first metatarsal is peculiarly short in the case of progeria; its length is 37 mm.; the normal 59 mm.; it is thus 62·7 per cent. of the normal. The upper epiphyses of both humeri are unfortunately missing, but the length may be estimated at 178 mm., the normal 305 mm., the first being 58·3 per cent. of the normal. The lower epiphyses of the radius are missing, but the radial length was probably 134 mm.; in the normal it is 230 mm.; the progerian radius is thus 58·2 per cent. of the normal. Thus it will be seen that the bones of the upper extremity have suffered more than those of the lower. An exact comparison of the normal and abnormal scapulæ is shown in Fig. 10. The axillary border of the progerian bone is only 58 per cent. of the normal, the scapula being like the clavicle markedly reduced, although formed in cartilage. The total length of the os innominatum from iliac crest to ischial tuberosity is 195 in the normal and 127 in the abnormal, equal to 65 per cent. of the normal. The various parts are reduced in equal ratio, except the ischium, which is particularly small. Taking the sacrum as representative of the axial skeleton it is seen to be less reduced than the limb bones. Its total height, measured in a straight line from base to apex—its degree of curvature is that usually found—is 72 mm.; in the normal

FIG. 6.



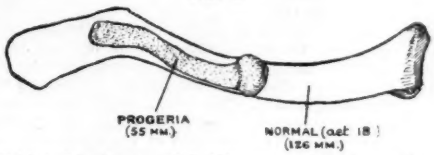
Palate, teeth, and zygomatic arches of case of progeria (natural size).

FIG. 7.



The mandible seen from above (viewed at right angles to the alveolar border and drawn natural size).

FIG. 8.

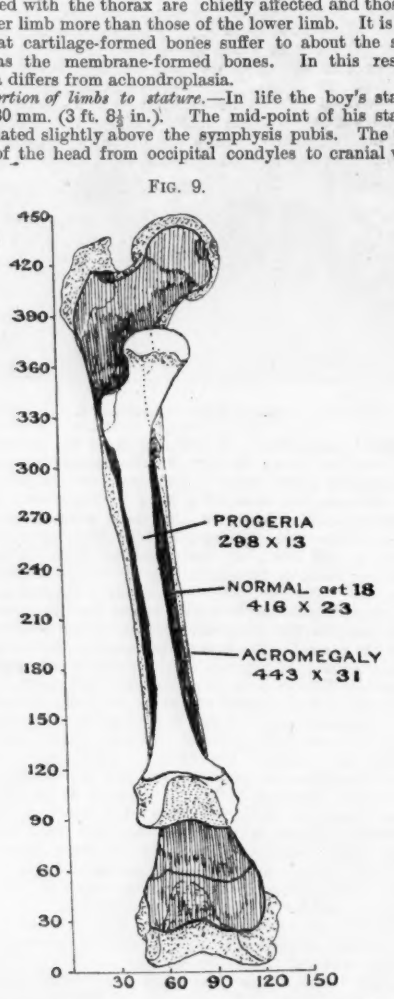


Right clavicle of a normal lad of 18 years seen from above with the clavicle of a case of progeria superimposed. (Half natural size.)

93 mm.; the sacral width in progeria is 74 mm., being 72·5 per cent. of the normal, while the sacral length is 77·4 per cent. of the normal. Unfortunately the bodies of the vetebræ are imperfectly preserved, but they appear to be rather smaller relatively than is the case in the sacral vertebræ. Thus in progeria the reduction in growth—as regards length—does not affect all parts equally. Those connected with the thorax are chiefly affected and those of the upper limb more than those of the lower limb. It is also seen that cartilage-formed bones suffer to about the same extent as the membrane-formed bones. In this respect progeria differs from achondroplasia.

Proportion of limbs to stature.—In life the boy's stature was 1130 mm. (3 ft. 8½ in.). The mid-point of his stature was situated slightly above the symphysis pubis. The total height of the head from occipital condyles to cranial vault

FIG. 9.

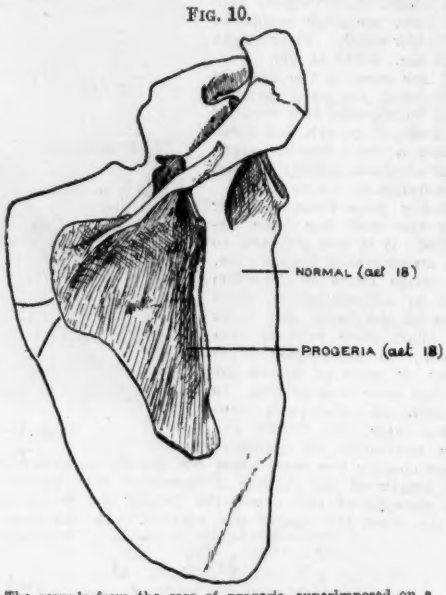


Three femora—progerian, normal, and acromegalic—superimposed to show the differences in their forms. In every respect the progerian and acromegalic bones are contrasted in form. The scale is shown by the side of the drawing in millimetres.

was 130 mm.; the length of the spine—if it terminated opposite the symphysis—may therefore be estimated at 440 mm.—a sufficient measurement for a boy of his stature. The femur represents 26·3 per cent., tibia 20·3 per cent., humerus 15·7 per cent., and radius 11·8 per cent. of the stature. The humerus especially, and also the radius, fall distinctly short of the normal (20 per cent. for humerus and 14 per cent. for radius), while the proportions of femur and tibia approach closely to the relative proportion found in lads of normal stature. The length of the hands and feet appears also to have been in due proportion to the stature.

Epiphyseal lines.—The condition of the epiphyseal lines, with certain exceptions to be mentioned, was such as is often seen in normal youths of 18. The condition of the sutural lines of the skull has already been described. Some of these were prematurely closed. Taking the main limb bones first, it is seen that the epiphyses at the elbow-joint, with the exception of the external epicondylar, have united with the shafts of the arm bones; the epiphyseal line at the upper end of the radius is just apparent; the scale-like epiphysis of the olecranon is fused and all traces of the lower epiphyseal line of the humerus gone, with the exception of

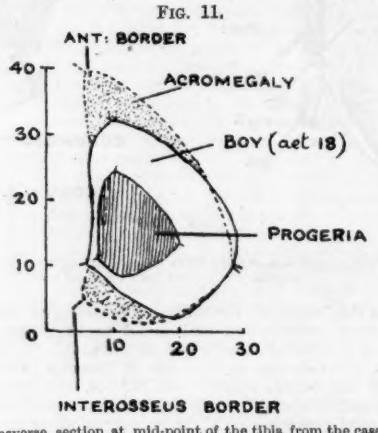
FIG. 10.



The scapula from the case of progeria superimposed on a scapula of a normal lad, aged 18 years (half the natural size).

the external epicondylar, which is still open. The upper humeral and lower radial and ulnar epiphyses are still ununited. The epiphyses at the upper extremity of the femur have joined; those of the femur and tibia on either side of the knee-joint are still unjoined; so are the lower epiphyses of the tibia and both upper and lower epiphyses of the fibula. As regards the state of

FIG. 11.



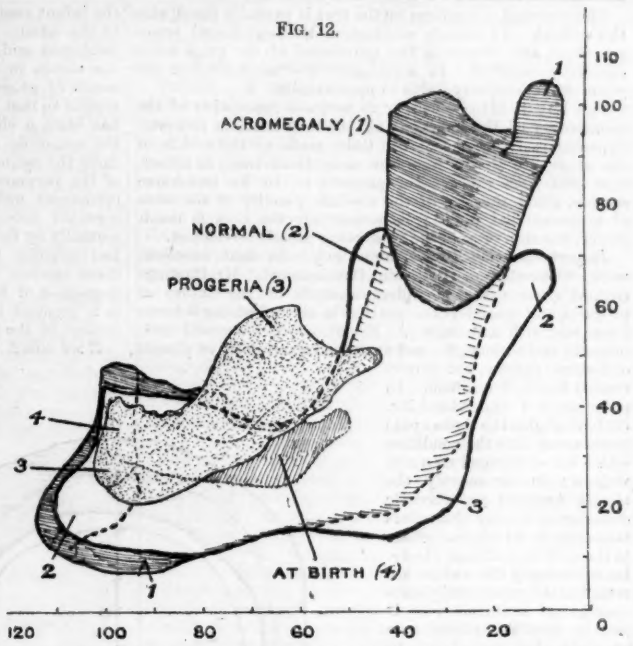
Transverse section at mid-point of the tibia from the case of progeria (shaded). Corresponding sections of the tibia from a boy of 18 and from a case of acromegaly are superimposed (natural size).

union of the epiphyseal lines of the long bones it is such as we expect to find in a normal lad of 18; there is neither premature closure nor delay of union. The condition of ossification of the bones of the hands and feet is in advance of 18; the epiphyses of the metatarsal and metacarpal bones have joined, an uncommon condition at the age of 18. The heel epiphysis

of the os calcis is also united. On one side a slight trace is to be seen of the line of union between ilium and ischium; it is probable that the os pubis was not united—not completely united—with the ilium and ischium at the cotyloid cavity. The pubis, unfortunately, is missing from both sides. The epiphysis on the ischial tuberosity is partly united; that of the iliac crest is unjoined. As regards the sacrum there is a delay in the union of parts. The bodies of the sacral vertebræ are ununited; the lateral masses of the first and second are still unjoined; the sutural lines between the lateral masses of the third and fourth, fourth and fifth sacral vertebræ are still unclosed. The various parts of each vertebræ are united. The segments of the mesosternum were observed to be united when the post-mortem examination was made.

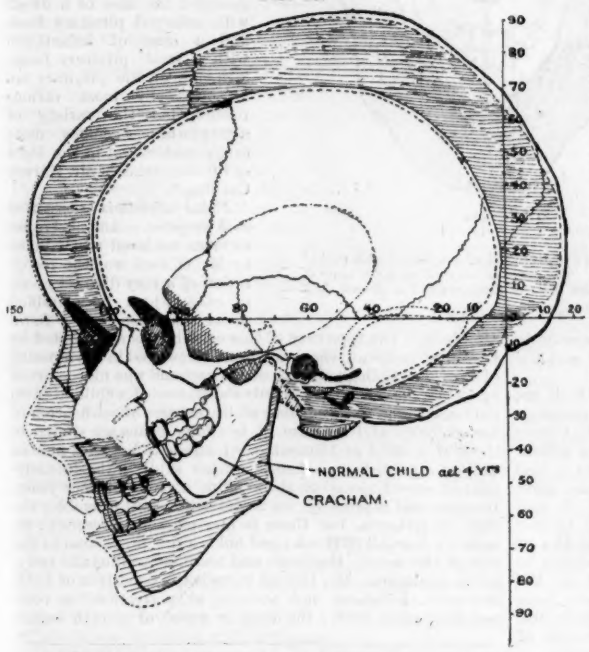
Peculiar features of the skeletal bones.—Although the bones are characteristic in shape, there is not that degree of deformity to be seen in achondroplasia. The appearances are those of a peculiar form of defective ossification. The atlas in its dimensions (extreme width 62 mm., antero-posterior diameter 28 mm.) is normal in size, but of delicate formation; there is a deficiency of the posterior arch, the neural laminæ being unfused, a condition to be interpreted in conjunction with the unfilled state of the foramen magnum. The neural arches of the cervical vertebræ are also peculiarly slender; the laminæ of the sacral vertebræ are normal in form, those of the fourth and fifth vertebræ are ununited. The slender form of the ribs may be best indicated by comparing transverse sections of the seventh ribs near their mid-point; in progeria the measurements are 5·5 × 3 mm., in the ribs of the normal boy 13 × 6 mm. The peculiar characters of the scapula and its dimensions can be seen from Fig. 10; it cannot be said to be infantile in form, except as regards the spine and acromion, and even they are peculiar. The characteristics of the long bones are best seen in the femur. In Fig. 9 the progerian and acromegalic femora are contrasted with the femur of a normal boy of 18. In progeria the deficiency of ossification mainly affects the shaft; the extremities, somewhat peculiar in shape, are less reduced. In the middle of the shaft the back to front diameter is 18 mm., the linea aspera being scarcely raised above the level of the shaft; the side to side diameter 13 mm.; in the normal femur the corresponding measurements are 26 × 23, in an acromegalic femur 35 × 31. The same measurements at the junction of the upper with the middle third of the shaft are 14 × 20 mm. (progerian); 27 × 33 (normal); 35 × 38 (acromegalic). There is a front to back flattening of the upper third of the femoral shaft in progeria. The thickness and uprightness of the neck will be observed in Fig. 9, the angle of the neck with the shaft being 145°; in the normal, 129°; in acromegaly, 125°. The articular surface of the head (diameter 36·5 mm.) is directed upwards and fits within a shallow cotyloid cavity with a diameter of 41 mm. at the brim. In the normal boy the head of the femur has a diameter of 52 mm.; in acromegaly, 55 mm. All muscular ridges and crests are absent from the shafts of the long bones in progeria; muscular insertions are marked by pits or depression. In the humerus the pectoral ridge is a trough-like impression; there is no deltoid eminence; in the radius the bicipital tuberosity is marked by a rough pit. In acromegaly all muscular ridges and ligamentous areas of insertion are raised and hypertrophied. The shaft of the humerus, and especially those of the radius and ulna, are peculiarly slender. The shaft of the humerus, at the insertion of the deltoid, has a side to side diameter of 9 mm., a back to front diameter of 9·5 mm.

FIG. 12.



Profile drawings of four mandibles superimposed to show the overgrowth of the ascending ramus in acromegaly and its undergrowth in progeria. The normal adult mandible is represented in outline only.

FIG. 13.



Profile of the skull and face of the dwarf Crachami contrasted with the skull and face of a normal child of four years. The scale of measurements and plane of orientation are given. (Reduced half natural size.)

The external cuneiform in the foot is partially fused with the cuboid. As already mentioned, the metatarsal bones are short and slender. The metatarsal of the great toe is especially curtailed. In acromegaly the metatarsal of the great toe is peculiarly liable to hypertrophy.

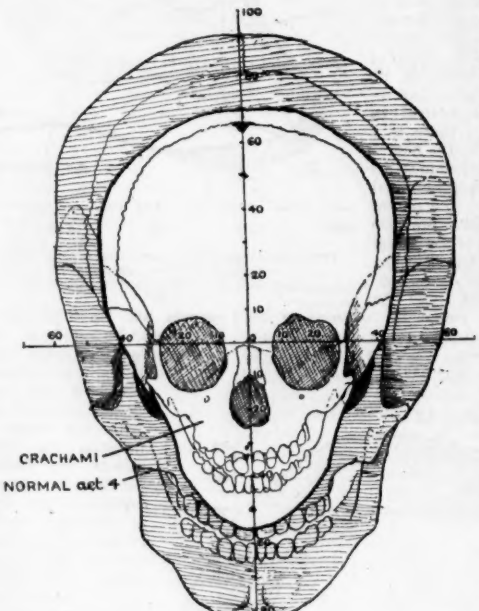
Fig. 11 will help to convey an accurate conception of the slenderness of the shafts of all the long bones in progeria. Superimposed sections of the tibiæ made at the middle of the shaft are shown from the same three cases as before. The tibia from the case of progeria is, in its transverse section, about the size of the medullary cavity of the tibia of a normal lad of 18; in acromegaly the area is much larger, the shin or anterior crest being greatly developed.

Progeria contrasted with acromegaly.—In that excellent work, "Disorders of Post-Natal Development," Mr. Hastings Gilford gives a very complete analysis of the nature of progeria, and specially observes that in all its features it forms a contrast with acromegaly. Nevertheless, he regards both progeria and acromegaly, not as negative and positive phases of a single disease, but as contrasted forms of senilism. In progeria, if I understand Mr. Gilford aright, the tissues pass prematurely into the condition which we see in aged men and women; in acromegaly the tissues undergo an atavistic change and assume characters belonging to a long past phase in the evolution of man's body. In acromegaly the tissues are recapitulating ancestral phases—ancestral senilism. It is possible that Mr. Gilford may be right, but my object in describing and investigating progeria and acromegaly is to see if they throw any light on the process or processes which regulate the growth and nutrition of the various tissues of the body. The direct influence of the internal secretions of the genital glands in modifying and determining the growth of the body is admitted. The thyroid, suprarenal, and pituitary glands also yield secretions which influence growth, although we may not yet know the manner nor the extent of their action. The association between acromegaly and adenoma of the pituitary can only be explained at present by supposing that the adenomatous pituitary, by means of a secretion which circulates in the tissues, has produced the series of growth changes seen in acromegaly.[6] That is the only working hypothesis we have at present to explain the pathological changes in the pituitary and the growth changes in the tissues of the body.

We have seen that those parts of the skeleton which are overgrown in acromegaly are undergrown in progeria. Acromegaly is not a general overgrowth of all the tissues and systems of the body; its cause is selective in action. Progeria is not a generalised dwarfism; the cause is also selective in its action, and affects those tissues and parts which are also affected in acromegaly. Figs. 5, 9, and 11 illustrate the truth of the statement; it is further exemplified in Fig. 12. In that figure the exact profiles of four mandibles are superimposed and accurately drawn to scale. The mandible at birth is superimposed on the mandible of a normal adult. By addition of new bone along the upper and posterior borders of the ascending ramus and absorption along its anterior border the ramus of the infant assumes the form, size, and position of the ramus of the adult. In acromegaly the process of growth is reawakened and the ascending ramus assumes the form and size shown in Fig. 12. In progeria there is not merely an arrest of growth, otherwise the ascending ramus would be similar to that of a newly born child. (See Fig. 12.) There has been a slight degree of growth, but from the shape of the mandible one infers that the regulated changes which carry the ramus backward and make room for the eruption of the permanent tooth failed to take place. The second permanent molars are erupting from the inner side of the coronoid processes. The body of the mandible grows normally by formation of new bone along its upper, lower, and anterior border; in acromegaly growth proceeds at these borders. In progeria growth proceeds by a uniform deposition of bone all over the mandible, but is least where it is greatest in acromegaly, along the posterior and upper borders of the mandible.

If we admit that the changes in acromegaly are produced by a stimulus or hormone proceeding from the pituitary, then it must be admitted that the condition in progeria can be best explained by an absence or marked diminution of that stimulus. The positive evidence in favour of such a view is wanting. In the present case the pituitary fossa is smaller than normal, and yet the reduction in size is not sufficient to justify us in affirming that insufficient glandular tissue was present. In achondroplasia the pituitary fossa is small. Dr. Rennie[7] reports the case of a boy of 16 with an endothelioma of the pituitary; some of the symptoms of that case, where we may suppose the pituitary tissue was invaded and reduced, recall those of progeria. Mr. Jameson Evans[8] has recorded the case of a dwarf with enlarged pituitary fossa and a case of infantilism with a small pituitary fossa. Tumours of the pituitary are attended by most various results, but the variety of symptoms becomes more easily understood in the light of the researches of Mr. Harvey Cushing.[9]

FIG. 14.



Full-face drawing of Crachami's skull contrasted with that of a child of 4 years. The plane of orientation is the same as in Fig. 13, and the scale of measurement is shown (half natural size).

Fœtal ateleiosis contrasted with progeria.—Amongst other services rendered to medicine by Mr. Gilford was the recognition of a very distinct group of cases which he classified under the name of "fœtal ateleiosis." The type case of this condition is represented by Caroline Crachami, whose skeleton is preserved in the Museum of the Royal College of Surgeons. Crachami was nine years of age when she died, but had only the stature of a child at birth (505 mm.), and the condition of the centres of ossification of her skeleton and the size of her long bones are similar to those of a child at 15 months. I allude to her case here in order to publish two figures of her skull, hitherto undescribed, superimposed on the skull of a child of four years. In shape and in some of its features the skull resembles the skull in progeria, but there is one marked difference: its capacity is small (600 c.c.) and holds a due proportion to the size of the body. Her brain and teeth, as well as the body, are in miniature. Mr. Gilford regards the condition of fœtal ateleiosis (ἀτελείωσις, not arriving at perfection) as commencing before birth; the delay or arrest of growth begins

[6] For an account of skeletal changes in acromegaly see Keith, THE LANCET, April 15th, 1911.

[7] G. E. Rennie, Brit. Med. Jour., 1912, vol. i., p. 1355.
[8] J. Jameson Evans, Brit. Med. Jour., 1911, vol. ii., p. 1461.
[9] Harvey Cushing: The Pituitary Body and its Disorders, 1912.

in utero, and such children are dwarfs at birth. In Crachami the nose is large; it is the only part which is out of proportion. The skull of Crachami differs from that seen in progeria by all the parts being equally arrested in growth; when Figs. 13 and 14 are examined it will be seen that in the proportions of the skull and face Crachami is a fairly accurate miniature of the head of a normal child. It is possible that ateleiosis stands in the same relationship to progeria as giantism stands to acromegaly. In giantism, as in ateleiosis, the whole body is affected. In progeria and acromegaly the action is selective; certain parts and certain systems are affected more than others. In the case of Crachami no accurate measurement can be made of the pituitary fossa owing to the unossified condition of the dorsum sellæ.

In discussing the pathology of progeria mention ought to have been made of the opinion held by M. Variot and M. Pironneau that the primary cause of the condition was to be sought in a disorder of the suprarenal bodies. In Mr. Gilford's case there was great reduction in size and cirrhosis of the kidneys with marked atheroma of the coronary arteries of the heart. How far these conditions are a cause or a consequence of the disease remains to be ascertained.

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NEW GROWTH AND INEFFICIENT IMMUNITY.

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AND

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IT is now a well-known phenomenon that upon the injection of a vaccine into an animal there ensues a preliminary drop in the opsonic index, followed by a rise above the normal, with a subsequent gradual fall again to the normal line. The period during which the index is below normal—that is, until the manifestation of the immune opsonin—varies with the type and dose of vaccine, but occupies generally about 8–10 days. This period is termed the negative phase.

Hæmolysophilic Substance and New Growth.

We have been able to show that after the injection of streptococcus vaccine into the rat, during a period roughly corresponding to the negative phase there is present in the rat's serum a substance which accelerates cobra venom hæmolysis, and later on disappears. That is, if the blood of the rat be tested before inoculation towards cobra venom according to a definite technique,[1] and found normal, and the rat be then injected with streptococcus vaccine, within 24 hours the serum becomes hæmolytic when tested together with cobra venom. Later on this hæmolytic phase passes off and the antibody (immune body) to the streptococcus appears.

We find that a similar hæmolysophilic property of the serum is present in rats successfully inoculated with a transplantable sarcoma (Ehrlich), but in this case there is apparently no production of immune body to the new growth or to cobra venom, so long as the tumour is growing. Such rats, as we have shown, are especially sensitive to the toxin of cobra venom, but if in response to the injection of cobra venom toxin an antihæmolysin does appear in the blood, the tumour regresses. A similar regression follows the artificial administration of the immune body to cobra venom contained in antivenom serum. We have, then, the following conditions in sarcomatous rats:—

1. A persistent hæmolytic property of the serum.
2. An absence of, and usually an inability to produce, antitoxin to cobra venom; if its production can be excited, the tumour regresses.
3. The administration of antitoxin in the form of antivenom serum causes regression of the tumours.

It seems, therefore, reasonable to infer that the absence of some immune body and the presence of a hæmolytic substance in the serum are factors which exert an influence on the growth of the tumour.

[1] Journal of Pathology and Bacteriology, vol. xvii., p. 82.

Effects of Vaccines and Toxins in Animals and Man.

Injection of vaccines in man also leads to the appearance of a hæmolysophilic property in the blood, but as we have not met with a case of human spindle-cell sarcoma during the period of this investigation, we are not able to say whether the hæmolytic substance is present also in this condition. But there are indications of the existence of a lack of resistance similar to that in rat sarcoma in some other forms of malignant growth. The varying action of Coley's fluid in cases of sarcoma illustrates such a state. As we know, a limited number of cases will react to Coley's fluid (just as a small number of rats will successfully react to cobra venom if given when the growth is small), and presumably in them antibody formation is still possible and is sometimes complete. Such cases should improve under treatment. (We have one human case belonging to this category, but treated with cobra venom. After removal of a periosteal sarcoma of the femur, the patient's blood still possessed the positive hæmolysing property. It disappeared after the combined administration of antivenom serum and cobra venom, and has been kept in abeyance by the administration of cobra venom only during the past 16 months.) In another limited number an ephemeral reaction occurs with some amelioration of symptoms, but finally the cases relapse. In yet other cases no reaction to the toxin takes place at all; the patients appear to have lost the power of protective reaction to these toxins.

This latter condition was well shown by two cases which we had under our care for some months. The one, a case of round-cell sarcoma, steadily improved during the administration of artificial immune substance in the form of antivenom serum (Pasteur Institute, Lille), but never showed any response by antibody production to cobra venom toxin. The body weight steadily increased (nearly 2 lb. in each of the three weeks that the serum was administered) and the tumour mass decreased markedly in size. The other, a case of carcinoma of the larynx, likewise showed no reaction to injected toxin, but put on 14 lb. in weight, and improved steadily so long as the artificial immune body (in this case diphtheria antitoxin) was administered (eight weeks). Unfortunately, at present there are technical difficulties in the way of long-continued administration of immune serum which we hope may be obviated by further investigation.

Most forms of human carcinoma do not as a rule exhibit the persistent hæmolytic reaction associated with the spindle-cell sarcoma of rats, but some cases give a similar reaction with viper venom instead of cobra venom. From what has already been said, this was to be expected. There are many forms of immune body and only a few of the laws governing their production are known. The extent of variety in type exhibited by new growths makes it difficult to believe in a uniform cause, but the cases quoted above give support for belief that the same principles may underlie the genesis of all the forms.

Suggestions for Research.

In the meantime, the indications are to attempt still further to correlate the different types of tumours with the substance in the serum which permits or aids their growth. But while the problem may thus be attacked from the chemico-pathological side, there is another method which may well give more rapid results—that is, empirical treatment on the lines of supplying various immune substances in the various cases and carefully noting any result which may follow.

For either method the serum of the patient requires examination, and it is best to abstract at least 10 c.c. of blood for the double purpose of having sufficient serum for examination and of attempting to induce the production of immune body. It is well known that bleeding does so, and it may be that our ancestors unconsciously but wisely in this manner replenished, each spring, their stock of antibodies. We have ourselves found that by bleeding rats the hæmolysing property associated with susceptibility to inoculation is markedly diminished.

Hypothesis concerning Dual Causation of New Growth.

So far as our experiments go they lend support to a hypothesis put forward by one of us some years ago that more than one factor is concerned in the causation of new

growth, and the two we are considering would necessarily have to be simultaneously operative. One of these factors may be general and variable; the other specific and intrinsic. The general and variable factor (the immediate cause) is irritation, whether chemical or physical, and one of its forms may well be the action of parasites or of their products. The specific factor (or predisposing cause) will be the result either of some derangement of function of the affected tissue or of the failure or aberration of some hormone produced by another tissue. On such a hypothesis it is obviously unnecessary either to require a different and separate parasite or micro-organism for each form of new growth or to expect it to induce generalised cancer in the absence of general tissue susceptibility.

Corroborative Observations.

There are several observations by other workers which tend to support this hypothesis concerning the relation between new growth and inefficient immunity. Crile[2] found that by bleeding a dog which was suffering from inoculated infective sarcoma, and then transfusing from a healthy dog, he could could cause a complete regression of the transplanted tumour, thus pointing to the blood as being an active factor in the growth of the tumour. Freund and Kaminer,[3] working with human serum and human cancer cells, find that normal serum contains a substance which dissolves cancer cells *in vitro*, whereas "cancer" serum contains a substance which is protective for cancer cells. Although these experiments are done under artificial conditions, their relative value is not thereby impaired, and they bring further evidence of a demonstrable difference in the composition of the serum of cancerous and normal individuals. Woglom[4] found that in time of onset, in duration and extent the immunity conferred on mice by a transplanted tumour of low virulence is roughly the same as that conferred by the injection of a bacterial vaccine. The immunity reaches its maximum in about ten days, after which it gradually diminishes to disappear probably after about 80 days.

Obviously the predisposing substance in the serum may be present without the onset of malignant growth, just as a low opsonic index may be present without the onset of the specific disease as long as the exciting factor is absent. Thus Strubell[5] finds that the opsonic index of the serum may be modified (towards streptococcus and tubercle infections) by the administration of certain drugs. Iodides and bromides depress the index, while arsenic and "pankreon" raise it, and it is interesting that the last two substances should be those believed to have most effect in the treatment of cancer. Strubell finds also that the depression in the index caused by administration of iodides may occur quite independently of objective symptoms or iodism. It is therefore quite conceivable that the absence of a substance unfavourable, or the presence of a substance favourable to new growth (or both) may occur without obvious symptoms.

Hypothesis Concerning Intrinsic Causes.

On the assumption of the presence or absence of substances favourable or unfavourable to new growth a variety of combinations is possible. Presupposing the existence of only two definite substances, the absence of one may give overwhelming preponderance to the other, or a definite increase of the substance favourable to growth may mask that which is unfavourable. A further explanation is suggested by the temporary presence of the hæmolytic substance (in the rat experiments) during the negative phase of the opsonic index—namely, that the hæmolysophilic substance may be an immature form of the substance which afterwards becomes immune body. This suggestion is rendered the more probable by its evanescent appearance before the advent of immune substance, since, according to our experiments, the hæmolysophilic substance disappears at the time when immune substance begins to appear in the serum. If this is so, it may be surmised that immune substance is the result of the action of more than one tissue or organ. For instance, the antigen might induce the secretion of a substance from an organ, which substance would only attain the form which we understand as immune body after modification, either by oxidation, or by the action of some other organ or secretion. In either of these two cases we must presuppose in malignant disease a deficiency in some internal secretion or a defect in the mechanism of its modification or oxidation.

On the other hand, the hæmolysophilic substance may not itself be due simply to the unaided action of a body secretion, but may result from the direct interaction of antigen and a body secretion, in which case a further output of the internal secretion should lead to complete neutralisation of the antigen, and the excess of immune substance would then be demonstrable.

The matter is an obscure one, and the difficulties that beset the quest of the birth place of immune body are well known, but we are not without hope that the continued systematic examination of the various body tissues will finally yield results that can be analysed with success.

Conclusions.

1. The presence of a hæmolysophilic substance is associated with susceptibility to sarcoma in rats.
2. A similar substance appears also temporarily after the injection of some vaccines and the susceptibility to sarcoma is then increased.
3. The administration of certain immune bodies will cure sarcoma in rats and will diminish new growth in man.
4. New growth may be attributable to two factors, one general and the other intrinsic. It is the intrinsic factor with which we have been dealing.
5. Reasons are suggested that the substance causing susceptibility may be immature immune body.

[2] Crile and Beebe: Huntington Cancer Research, vol. ii., 1908.
[3] Freund and Kaminer: Wiener klinische Wochenschrift, 1911, No. 51.
[4] Woglom: Journal of Experimental Medicine, No. 5, Nov. 2nd, 1912.
[5] Strubell: Verhandlungen des Kongresses für innere Medizin, 1912, p. 704.

A CASE OF INFECTION IN MAN BY THE BACTERIUM PRODIGIOSUM.

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THE bacterium prodigiosum is an organism noted for the beautiful and varied colours which it produces, varying from deep blood-red to pale pink. Historically it is of interest as having been the cause of what was known in mediæval days as the "bleeding host," which in reality was a number of colonies of this organism growing on the wafers and resembling spots of blood. In recent times it has been brought into prominence from the fact that it is used in the preparation of Coley's fluid, which is prepared from a mixed culture of the streptococcus erysipelatis and the bacterium prodigiosum, the latter being added for the purpose of lessening the toxicity of the streptococcus. The organism leads a saprophytic life on potatoes, bread, and practically all starchy substances, and has been found in water. It is known to be pathogenic to guinea-pigs, rabbits, mice, and slightly to frogs, but so far as can be ascertained from the literature no case—except for the fact that Parks describes cases of diarrhœa which he suggests as being due to this organism—of direct infection in man has been recorded. It was first described by Ehrenberg, and since then a considerable number of bacteriologists have written and published on the subject, including Schottelius, Kübler, Wasserzog, Bertarelli, Fluegge, and others. Recently a case, the preliminary notes of which we published in the *Guy's Hospital Gazette*, Vol. XXVI., No. 632, has come to our notice, which has undoubtedly proved to be a case of infection by the bacterium prodigiosum.

The patient, aged 24, a clerk in the city, with no history of any previous illness beyond measles and bronchopneumonia in infancy until the present condition developed, and no family history of tubercle, was in perfect health until about three years ago, when he began to be troubled with a chronic cough. He noticed that the cough, which was always accompanied by a large amount of liquid and offensive expectoration, became worse during the winter months, and the sputum, though it remained liquid and still very offensive, became much darker in colour and still more plentiful. More recently his throat became affected and he noticed that when singing he very rapidly became hoarse. He did not consult a medical man until the end of last June, when

to his great surprise he spat out what he believed to be blood. The expectoration did not appear to be associated with any act of coughing or retching. Nevertheless, fearing himself to be consumptive, he consulted a medical man. After carefully examining the patient's chest and finding no abnormal physical signs a specimen of the sputum was procured. This we examined on July 15th, the patient by this time having on five different occasions spat out what he thought to be blood. It was liquid in consistence, dark in colour, and retained a very strong, unpleasant odour. A direct smear revealed no evidence of tubercle bacilli, no red blood cells, nor any leucocytes, and showed only what appeared to be a large quantity of intestinal bacteria. As no history of the case had been given us and only an examination for tubercle asked for, no further investigations were made at the time.

On August 9th we received and examined a second specimen of the sputum, and found it to be similar in appearance and microscopical examination to the previous one, but on this occasion some of the material was planted out on various culture media, with the result that on all the agar tubes a thick mixed growth of pink and white colonies appeared. Subcultures from the white colonies showed a pure growth of the bacillus mesentericus, whilst subcultures from the pink colonies showed all the characteristics of the bacterium prodigiosum—viz., gelatin was liquefied in 24 hours; milk was clotted in 12 hours, with acid reaction; lactose, glucose, and mannite were fermented with production of alcohol and CO_2, whilst on all the agar tubes a thick creamy growth showing various shades of pink and red was produced; and on potato a very thick growth, blood-red in colour, was produced in 12 hours. The organism gave a curious fishy odour resembling that of shrimps, and a marked fluorescence was produced on the agar media. On microscopical examination the organism was found to be a short, motile rod with rounded ends, almost coccoid in shape, and losing the stain by Gram's method.

On August 21st and 22nd the patient repeated his experiences of the previous month, spitting out what he thought to be blood, and brought for examination a sample of both days' expectorations. On microscopical examination these specimens were very similar to the previous ones, with entire absence of anything suggesting tubercle or even blood, but presenting a large number of Gram negative motile bacteria which proved to be the bacterium prodigiosum. Cultures on various media from this specimen showed a thick creamy growth, mostly white in colour, but on some tubes showed a distinct colouration. On microscopical examination it was found that there were present, in addition to the bacterium prodigiosum, staphylococci, streptococci, together with a Gram-negative coccus, most probably the micrococcus catarrhalis. As it was thought that possibly the presence of these organisms might inhibit the growth of colour, an emulsion of these bacteria was made and planted out with the pink bacterium prodigiosum, but the result showed these organisms had no influence on the production of colour.

On three other occasions we examined specimens of pink sputum from the patient—in one instance he produced the specimen whilst in the laboratory. Each time we found conditions similar to those just described—i.e., a thick white growth of an organism identical with the bacterium prodigiosum. Furthermore, this organism always yielded the characteristic odour of the bacterium prodigiosum, liquefied gelatin, and showed the peculiar fluorescence on agar cultures. It, however, never assumed the typical pink colour under any usual circumstances (when grown aerobically in an atmosphere of oxygen, anaerobically at various temperatures and on all the usual media). An emulsion of the white growth was then shaken up with an emulsion of the bacillus mesentericus, that being the organism with which it was associated in the first instance. It was then planted out as follows: 1. On agar in Petri dishes, incubated 24 hours at 37° C., yielding a filmy growth with the characteristic fluorescence on the agar and the fishy odour; it, however, never assumed a darker shade, and a more dilute emulsion planted out on agar in a Petri dish showed a similar colour. 2. On gelatin in Petri dishes at room temperature. In this case the gelatin gradually became liquefied in saucer-shaped depressions, and a filmy growth appeared in nine days. Six days later discrete pink spots appeared on the surface showing all the microscopical characteristics of the bacterium prodigiosum. Subcultures from these coloured growths on agar at 37° C. yielded a thick white growth which turned pink at room temperature.

In all we examined six specimens of pink sputum, and in no case did we find a single acid-fast organism or any red blood cells, and on each occasion there grew colonies of the bacterium prodigiosum. The patient's blood was tested with a view to ascertaining his resistance to tubercle, and a series of opsonic indices was found to be within the limits of the normal. We examined the patient's pharynx, larynx, and nasal fossæ, and noticed that whilst all the mucous membranes were markedly injected, the pharynx was decidedly granular. Cultures were taken from the "sterile" portion of the nasal fossæ, which remained sterile, and from a granule in the naso-pharynx which grew a Gram-negative streptococcus, which, however, was non-hæmolytic. Dr. F. O'B. Ellison kindly X rayed the patient, and was of the opinion that there was some slight peribronchial thickening at the right base. His opsonic index was then tested to the bacterium prodigiosum, and a series of indices showed that it fluctuated considerably but always remained below the normal. A vaccine was prepared and the patient was inoculated, the opsonic index of the blood being tested before and after each inoculation. The following table gives the first four doses with their results:—

	Sept. 7th. 1 million.	Sept. 12th. 5 million.	Sept. 20th. 10 million.	Sept. 28th. 20 million.
(Before inoculation)	0·85	1·30	1·42	0·56
(Next day)	0·85	1·73	0·85	0·92
(2 days after)	0·70	1·03	2·40	1·25
(3 days after)	0·88	0·79	2·36	0·90

Inoculations were continued at intervals of a week until in all eight were given, a maximum dose of 80 millions being reached. On each occasion the opsonic index showed a slight negative phase with a corresponding rise two days after. After the first two inoculations the pink colour disappeared from the sputum entirely, only reappearing for a short time on two occasions during the negative phase succeeding the inoculation. The patient's health began gradually to improve, his throat became less troublesome, his cough disappeared, and he was able to sing without hoarseness. It is now six weeks since he saw any suspicion of colour in his sputum. He is feeling and looking perfectly well. Dr. Ellison, however, still finds the slight peribronchial thickening at the right base, but this is the only trace of any unusual condition which he shows.

Although it is impossible to locate the exact seat of the infection and still less possible to give the exact conditions which may cause the growth of the bacterium to take on a colour closely resembling blood, yet the fact remains that in all the bacteriological examinations of the sputum, particularly all those coloured pink, no red blood cells were found, and in all instances the bacterium prodigiosum grew on culture. This fact taken together with the complete absence of any pathological condition which might produce hæmoptysis or hæmatemesis, gives clear evidence of the fact that this is a case of infection by the bacterium prodigiosum. It also shows that in all cases of suspected hæmoptysis a complete examination of the sputum is of the greatest importance.

We performed a number of experiments, growing the organisms under different conditions of temperature and atmosphere with a view of finding out what controls the great variety of colour produced, but our results were as contradictory as those which appeared to have been arrived at by the various authors who have published on the subject. The results of our experiments, however, showed the following conclusions: 1. That the organism is motile; that its motility is soon lost. 2. That the colour tends gradually to decrease on subculture. 3. That the colour is not lost on exposure to light, as six tubes of different colours were exposed to daylight for two months and showed no perceptible difference in colour. 4. That the colour is best produced at a temperature of 20° C. 5. In weak acid or alkaline media the colour is intensified, whereas in media which are markedly acid or alkaline the colour is lost. This may account for the discrepancy in the results of other observers, some of whom state that with acid the colour is lost and with alkaline it is intensified, while others state the reverse. 6. After growth for some weeks on the same culture the organism becomes coccoid in shape. 7. We found that when the colour seemed permanently lost it could in most cases be recovered by planting out on gelatin at room temperature and transplanting on to potato and incubating at 20° C., when the colour tends to return.

CASE OF OLD-STANDING DISLOCATION OF HIP-JOINT TREATED BY OPEN OPERATION.

BY A. GIBSON, M.A., M.B., CH.B. EDIN.,
MEDICAL SUPERINTENDENT AND SURGICAL REGISTRAR, SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), GREENWICH.

THE patient, a Chinaman, aged 49, was admitted to the Seamen's Hospital, Greenwich, under the care of Mr. E. Rock Carling, on May 1st, 1912. His history was that some eight weeks previously he had been struck on the outer side of the right hip by a lifeboat which was being lowered. The ship was at the time in the Indian Ocean, and the condition remained untreated until his arrival in London on May 1st.

On admission the right lower limb was flexed and rotated inwards at the hip-joint. The knee-joint was flexed. The great trochanter was unduly prominent, and behind the great trochanter the head of the femur was palpable. There was considerable atrophy of both flexors and extensors of the thigh. There was no evident bunching up of the external rotators of the thigh. The diagnosis of median dorsal dislocation was made and confirmed by the X rays.

On May 3rd a general anæsthetic was administered and a strenuous attempt made to replace the head of the femur. This proved futile. The patient was put back to bed and 12 lb. extension was applied in the line of the femur. On the 10th an open operation was performed. As a result of the extension the limb was distinctly more mobile. The incision resembled somewhat that for a Kocher posterior hip-resection. Commencing below the base of the great trochanter, it ran up as if making for the anterior superior spine of the ilium, as far as the summit of the great trochanter. From here it was carried backwards towards a point about 3 inches behind the anterior superior iliac spine. The fascia covering the gluteus medius was divided in the same line as the upper portion of the incision. The gluteus maximus was partially divided in a direction transverse to that of its fibres. The outer surface of the great trochanter being exposed, the vastus externus was cut through close to its origin. The obturator externus tendon was next cut through close to its insertion. It was seen that the head of the femur had passed below this tendon. The great trochanter with its attached muscles was then severed from the femur by an oblique saw-cut made in the plane of the upper surface of the neck of the femur. By this means free access was obtained to the acetabular region. The head of the femur was displaced right out of the wound. The acetabular cavity was well-nigh obliterated, the capsule being doubled into it and having become adherent, so that the aperture now admitted with difficulty a finger-tip. The adherent capsule was removed with gouge and with scissors until the cavity was clear. The head of the bone was then with considerable difficulty replaced in the acetabulum. This was done by leverage combined with manipulation. A fulcrum was obtained at the junction of the shaft and neck by resting the bone at this point upon a vertically placed steel rod (periosteal elevator) the lower end of which rested on the firm table. In spite of the fact of free muscular detachment considerable force was necessary The severed muscles were then sutured; the great trochanter was replaced and fixed in position by two screws. The wound was closed with silkworm-gut sutures. As soon as the patient was put back to bed extension of 8 lb. weight was applied. A long Liston splint was secured to the left (sound) side.

On June 1st the splints were removed and massage was commenced. Ten days later on testing, it was found that movement at the hip-joint was almost *nil*. The knee-joint and hip-joint were submitted to very thorough passive movement. By June 25th, massage being continued, movement at the hip-joint was distinctly more free, and the patient was encouraged to move the limb himself. On July 1st he was allowed out of bed. It was then observed that he had considerable foot-drop on the right side. During the month of July he went about with crutches. Towards the end of the month the crutches were removed and two stout walking-sticks substituted for them. Not, however, until the latter part of August did he go about without the aid of the sticks. The drop-foot condition showed distinct improvement.

On Sept. 16th the patient dispensed entirely with the sticks. A boot with a toe-raising spring was procured for him. On Oct 2nd he was discharged from hospital. Very slight movement was taking place at the hip-joint, and he "dipped" the pelvis a little at each step. The functional result, however, was very good, and the patient departed with the intention of resuming work as a ship's fireman.

Several points of interest emerge from the study of this case. 1. The futility of expecting reduction by manipulation after so long a period as eight weeks. 2. The use of a lever in replacing the head of the bone. 3. The excellent exposure given by the posterior incision. 4. The great sciatic nerve was not seen during the operation.

I am indebted to Mr. Rock Carling for permission to publish this case.

Greenwich.

THE TREATMENT OF RECENT INJURY BY MOBILISATION AND MASSAGE.[1]

BY JAMES B. MENNELL, M.A., M.D., B.C. CANTAB., &C.

THE pioneer in the treatment of fractures by mobilisation and massage was Lucas-Championnière; he has been followed by disciples who have developed his method and applied it to other forms of recent injury, accidental and post-operative—to almost every class of case, in fact, in which massage forms an integral part of treatment. The massage used consists of a slow, light, rhythmical stroking in the neighbourhood of the injury, the movement being merely a "caress" and "almost resembling a mesmeric pass," while the actual site of injury is scrupulously avoided. The mobilisation must be regarded in the light of a therapeutic measure, the dose being meted out with care and accuracy. It consists of two elements—passive movement and active movement. When the dose of passive movement is being given the patient must be made to coöperate by actively relaxing the whole part. Failure to obtain this active relaxation, or the application of any other form of massage to the injured part, is contrary to Lucas-Championnière's teaching, and absence of a satisfactory result in such circumstances must be ascribed to the practitioner and not to the treatment.

The axiom underlying the whole of the treatment is that "movement is life," and although the massage undoubtedly has a profound effect in the restoration of the injured part to health and strength, yet it may be said, broadly speaking, to be no more than the means of which mobilisation is the end. All the generally accepted forms of massage aim at compulsion, whether of the blood in a given direction or of some movement. The massage now advocated, on the contrary, only attempts, by its reflex action through the nervous system, to restore the tone of the vaso-motor system which has been disorganised by the shock of injury; and in like manner to combat the injury sustained by the nerves in connexion with the injured part.

An indication of the reflex action of the massage is the disappearance of the pain and spasm after fracture, and the beneficial effect of treatment is to be seen in the results obtained after such injury. Thus a severe Colles's fracture has been restored to perfect movement, though not to perfect strength, 10 days after fracture; a ballet-girl has been known to take part in rehearsals three weeks after fracture of the surgical neck of the humerus; a goods porter to be at work six weeks after sustaining fracture through the middle of the shaft of the bone; and a costermonger to push his barrow about Lambeth four weeks after he had sustained a Pott's fracture with severe outward dislocation of the foot. By this method a fortnight should suffice for the restoration of a patient who has dislocated his shoulder. A patient who had his internal semilunar cartilage removed 18 months ago, and who has had no trace of subsequent trouble, was able to walk up and down a long flight of stairs and go for a motor drive ten days after operation. As a cure for insomnia the stroking massage is unrivalled, while as a cure for neurasthenia its success, when other forms of massage have failed, is most striking. In these cases the action of the massage is not, as has been

[1] Epitome of a paper read before the Medical Society of London on Jan. 13th.

suggested, merely hypnotic, but succeeds solely by its reflex action through the nervous system, the efficacy of which is well demonstrated by the remarkable results obtained in a case of functional angina. If a general collapse of the nervous system is amenable to the treatment described, we can understand how potent an agent we have at our disposal when dealing with local disturbance of the nervous system in the part that has suffered injury, and as a prophylactic to the more general disturbance that so frequently follows even a comparatively mild injury.

The treatment of post-operative arthritis has already been referred to, and that of ordinary traumatic arthritis is very similar. When the treatment advocated is employed only the briefest rest in bed is necessary, two days often sufficing; even during that period the rest is broken by regulated doses of both active and passive movements. When treatment by mobilisation and massage is adopted the injury done to the bones in such fractures as Colles's fracture is less momentous than the traumatic teno-synovitis and arthritis which are its necessary accompaniments. This being so, there is no need to add to what has already been said of the value of the treatment for teno-synovitis. Even when sepsis has occurred and the use of a limb been jeopardised, it has succeeded, with some skill in application, in restoring the limb to perfect use, with the exception of the movements which were dependent on the use of tendons that had sloughed away.

The treatment of all strains and of the injury known as "wricking" the back should certainly comprise mobilisation, since it alone can prevent the disastrous sequelæ common to these injuries. When a muscle or tendon or ligament is torn, it is inevitable, without the aid of mobilisation, that adhesions should form, with the consequence of disablement and misery. With the aid of mobilisation and of its necessary precursor, massage, this misfortune can be, and is, entirely avoided.

If there is so much to be said in favour of the treatment advocated, how does it come about that the verdict of the recent fracture committee was so unsatisfactory to its advocates? The answer is simple. In the cases reported to the committee nothing was said of the actual nature of the treatment applied. Without doubt, in numbers of cases in which this treatment was reported to have been given, any authority thereon would have been the first to say that the time-honoured treatment by fixation would be preferable to that proposed to be applied under the guise of mobilisation and massage. Such in the past has been the misunderstanding and abuse that have obscured and so discredited this method. Until the truth about the treatment is known, and until its elements, and the very terms by which it is known, are rightly apprehended, we cannot hope for a more favourable verdict. But when the time comes in which the truth of the matter is recognised, the pre-eminence now claimed by a few for treatment by mobilisation and massage will be universally conceded.

Royal Crescent, W.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Jan. 17th, Dr. F. J. Allan being in the chair. The accounts for the year were considered, and it was shown that in spite of heavy sickness claims and the large sums being paid away in bonuses to members the funds of the society still show an increase. The bonuses now paid at 65 being for such substantial amounts are much appreciated by members who have received them, and it is hoped that after the next valuation these will be continued as before. Many letters from members are received at the office thanking the committee for the satisfactory way their claims have been settled and the great comfort they have derived from the knowledge that they would receive their cheques every week so long as unable to work, and it would appear from these that this method of payment is appreciated more than the lump sum compensations so frequent in most other insurance companies. In fact, one of the most striking features of late years has been the large number of members who drop policies in other companies and come to this society. Prospectuses and all further information can be had by writing to the secretary, Mr. Bertram Sutton, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ACUTE HÆMORRHAGIC SPLÆNITIS WITH SPONTANEOUS RUPTURE COMPLICATING EARLY PREGNANCY.

BY H. L. MARTYN, M.B., B.S. LOND.,
LATE RESIDENT MEDICAL OFFICER AT KING EDWARD VII. HOSPITAL, WINDSOR.

THE patient, a married woman aged 30, gave the following history. Up to midnight of Jan. 1st, 1912, she was well in all respects. She had been married for 12 years, and throughout her life had been accustomed to heavy laundry and house work. She had had no previous illness, her three children had been born after normal labours, and at the present moment she believed herself to be about three months pregnant. On rising from bed on the morning of Jan. 2nd she complained of sudden severe pain in the left hypochondriac and lumbar regions. The pain was confined to the left side and was unaccompanied by vomiting. The patient returned to bed and about 11 A.M. commenced severe hiccoughing which persisted at intervals throughout the day. She drank a little fluid nourishment and did not vomit; the pain, however, increased steadily in severity and extended more into the epigastric region.

The patient was admitted to King Edward VII. Hospital, Windsor, at 6.45 P.M. She appeared a well-nourished woman, but her expression was pale and anxious and her lips slightly cyanosed. Hiccoughing was continuous; the respirations were 30, shallow, and with a marked expiratory grunt, temperature 99° F., and pulse 88, volume small and tension low. The abdomen was not distended, and moved slightly on respiration. Tenderness was present chiefly in the epigastric region, but all the abdominal muscles showed decided defensive action. There was no dulness in the flanks and no obliteration of liver dulness. Examination per vaginam revealed an apparently normal uterus pregnant about three months.

A tentative diagnosis of acute hæmorrhagic pancreatitis was made and the abdomen was opened by a 3-inch incision above the umbilicus under chloroform anæsthesia. Free blood welled up immediately the peritoneum was opened, no fat necrosis was visible, and a rapid examination of the pelvis revealed nothing abnormal. On displacing the intestines blood was found welling up in very large quantities from the region of the foramen of Winslow. The condition of the patient was at this time desperate, the face was cyanosed, the pulse unappreciable, and the respirations sighing. A 10-minim injection of pituitary extract with oxygen inhalation was given, and large quantities of gauze plugged firmly into the apparent origin of the bleeding, further search for the actual source being impossible. After returning the patient to bed she was given 2½ pints of saline with adrenalin intravenously, and a hypodermic of 1/100 gr. digitalin. Her condition improved greatly, and by 9 P.M. her pulse was 120 and temperature 101°. She was very restless and complained of much pain, but after a ¼-gr. of morphia and atropine passed a fair night.

During the next day (Jan. 3rd) her condition continued to improve. The pulse fell to 100, but the respirations remained at 35 and temperature 101·4°. Oozing from the wound, which for some time after the operation had been free, had now ceased. Fluids were retained by the mouth, flatus passed freely per rectum, and there was no abdominal distension. Rectal salines were given, as 8 oz. injections six-hourly, and were absorbed well.

On Jan. 4th the patient's condition was decidedly worse. The pulse-rate remained the same, but the respirations had risen to 45 and the temperature to 103°. The tongue was furred and the lips covered with sordes. There was no abdominal distension or tenderness and flatus passed freely. At 2.30 P.M. calomel in ½-gr. doses was started half hourly, but at 4 P.M. the patient suddenly aborted, the hæmorrhage being brisk and the placenta retained. Under light chloroform anæsthesia the uterus was rapidly cleared out and a hot intra-uterine douche given. Intravenous saline infusion was carried out throughout, and after the uterine condition

had been dealt with, as her condition remained fair, the plugging in the abdominal wound was removed, no hæmorrhage occurring. The patient recovered from the anæsthetic at 5.30 P.M. By 6 o'clock the temperature was 104·5°, pulse 130, and respirations 45, but during the next hour she became rapidly worse and died at 7 P.M.

A post-mortem examination was made on Jan. 7th by Dr. C. R. Elgood. The abdomen contained no free blood and no signs of general peritonitis were present. The pancreas showed a large cyst of the size of a Tangerine orange connected with the head and projecting into the greater sac below the transverse colon. The lesser sac contained a little free blood which had oozed from a rent about one inch long in the peritoneum covering that portion of the spleen in relation to the sac. The organ was enlarged and the capsule extensively stripped up by a blood clot corresponding to about 3 oz. of blood lying beneath it. The substance of the spleen was soft and diffluent, and its interior showed numerous large hæmorrhages which communicated in several places with the clot beneath the capsule. All other abdominal, thoracic, and pelvic organs were normal.

A section of the spleen showed large areas of almost complete necrosis. No round-celled infiltration was present, but over these areas the cells were in a condition of cloudy degeneration and in places were reduced to a mere badly staining granular detritus. This state of necrosis was not uniform although widely diffused throughout the organ, in some places perfectly normal splenic tissue being visible. No bacteria were present in Gram-stained sections.

I am indebted to Dr. H. Spurrier, of Maidenhead, under whose care the case was at the hospital, for permission to publish these notes.

Eton.

A CASE OF STRANGULATION OCCURRING IN A VENTRAL HERNIA.

BY F. W. GANGE, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND.

THE following case appears to me to be worth recording on account of the rarity of strangulation occurring in a ventral hernia.

I was called in on Dec. 31st, 1912, to see a married woman who was suffering from severe abdominal pain and constant vomiting. She informed me that the pain and vomiting had been going on for about 24 hours, and that for some weeks past she had been subject to attacks of slight abdominal pain which had hitherto passed off in a few hours. There had been no previous vomiting. There had been a small action of the bowels on the same day. On examination the patient presented an anxious expression. The temperature was normal and the pulse 100. The abdomen was large and pendulous, and there was the scar of an old wound in the middle line below the umbilicus. In the centre of the scar a swelling could be felt which was extremely tender. It was resonant and very tense, and could not be reduced by pressure.

I took the patient into the Faversham Cottage Hospital and operated soon after her arrival. On cutting down over the swelling I found a sac surrounded by very dense scar tissue, containing a small loop of slightly congested intestine and a large piece of matted omentum, the latter adherent to the sac wall. A dense ring of fibrous tissue constricted the neck of the sac. This was divided and the sac and fibrous tissue cut away, as well as the constricted portion of omentum, and the bowel returned into the abdomen. The wound was then closed. The bowels acted immediately after the operation. The patient has made a satisfactory recovery.

Faversham.

A CASE OF SUCCESSFUL RESECTION OF AN IRREDUCIBLE INTUSSUSCEPTION IN A CHILD.

BY C. LEONARD ISAAC, M.B., B.C. CANTAB., F.R.C.S. EDIN., ASSISTANT SURGEON TO THE SWANSEA HOSPITAL.

A GIRL, aged 2 years, was sent to the out-patient department of the Swansea Hospital on July 19th, 1911, with the following note: "My little patient has had colicky pain off and on for 14 days with constipation (chiefly). Is said to be passing dark stools. Parents are afraid she has swallowed a coin and are anxious to have her X rayed. ? Cause. Have seen nothing so far to justify diagnosis of intussusception."

I saw the child at about 4 P.M. There was no distension or rigidity of the abdominal walls, but as she was so fretful and restless it was impossible satisfactorily to palpate the abdomen. The child was immediately anæsthetised on her mother's lap, and an elongated tumour was easily felt ascending up the colon where it became obscured by the liver; the lower end could be pushed backwards and forwards towards the middle line. Nothing was felt per rectum. The child was immediately sent into the theatre, and under chloroform and ether anæsthesia the abdomen was opened in the right flank. An intussusception was found extending into the transverse colon; the greater part of this was easily reduced, but the last couple of inches was irreducible. An incision was made into the intussuscipiens and the intussusceptum delivered and snipped off with scissors; the ends of gut were then united as in Maunsell's method, and the opening in the intussuscipiens closed. The appearance of the œdematous circular enterorrhaphy made one anxious as to its immediate permeability, and the child's condition being good the ileum was anastomosed to the ascending colon, the intussusception being an ileo-cæcal one. The abdomen was closed and the patient returned to bed. The bowels moved naturally on the morning after the operation. On admission the temperature was 97·8° F., the pulse 124, and the respirations 30. The temperature ran up to 101° on the second day and 102° on the third day, but from that day on the child made an uninterrupted recovery.

Swansea.

Medical Societies.

ROYAL SOCIETY OF MEDI[redacted]

MEDICAL SECTION.

Records of King Edward VII. Sanatoriu[redacted] during Arsenical Therapy.

A MEETING of this section was held on Ja[redacted] FREDERICK TAYLOR, the President, being in the [redacted]

Dr. NOEL D. BARDSWELL read a paper on the [redacted] of the King Edward VII. Sanatorium. They co[redacted] the records of 1079 patients discharged from July, [redacted] to July, 1911. The diagnosis of pulmonary tuberculosis was confirmed by the medical staff in 1027 cases, and not confirmed in 52 cases. Of the 1027 diagnosed by them as cases of pulmonary tuberculosis, tubercle bacilli were found in 82·7 per cent. The diagnosis was not confirmed by the finding of tubercle bacilli in 17·3 per cent. Of these 1027 definite cases, 112 had been lost sight of, and 915 had been traced to October, 1912. Dealing only with the 915 traced to 1912, 764 had tubercle bacilli present on admission, and in 151 no tubercle bacilli were found at any time. As to the condition in 1912 of the 764 with tubercle bacilli present, 437, or 57·1 per cent., were well or alive; 327, or 42·8 per cent., were dead. In Group I. (early cases), 153, or 83·6 per cent., were well or alive; 30, or 16·3 per cent., were dead. In Group II. (moderately severe cases), 220, or 61·6 per cent., were well or alive; 137, or 38·3 per cent., were dead. In Group III. (severe cases), 64, or 28·5 per cent., were well or alive; 160, or 71·4 per cent., were dead. Regarding the condition in 1912 of the 151 in whom no tubercle bacilli were found, 134, or 88·7 per cent., were well or alive; 17, or 11·2 per cent., were dead. Reviewing the significance of the disappearance of tubercle bacilli whilst under treatment, of the 764 with tubercle bacilli present, 148, or 19·3 per cent., lost their tubercle bacilli before discharge. In 1912, of the 148 who lost their tubercle bacilli while in the sanatorium, 124, or 83·7 per cent., were well or alive; 24, or 16·2 per cent., were dead. In Group I.: 69, or 87·3 per cent., were well or alive; 10, or 12·6 per cent., dead. In Group II.: 49, or 89 per cent., were well or alive; 6, or 10·9 per cent., dead. In Group III.: 6, or 42·8 per cent., were well or alive; 8, or 57·1 per cent., dead. In 1912, of 616 with tubercle bacilli present on admission and on discharge, 313, or 50·8 per cent., were well or alive; 303, or 49·1 per cent., dead. In Group I.: 84, or 80·7 per cent.,

were well or alive; 20, or 19·2 per cent., dead. In Group II.: 171, or 56·6 per cent., were well or alive; 20, or 19·2 per cent., dead. In Group III.: 58, or 27·6 per cent., were well or alive; 152, or 72·3 per cent., dead.—Dr. P. HORTON-SMITH HARTLEY emphasised the importance for statistical purposes of dividing the cases of tuberculosis of the lungs into those with tubercle bacilli in the sputum and those without. He raised the question as to the method of diagnosis when bacilli were not present. The presence of a focal reaction after tuberculin injection left little doubt of the truth of the presence of tubercle.—Dr. T. D. ACLAND expressed himself as not satisfied that the presence or absence of tubercle bacilli in the sputum was a fair test of the presence or absence of tuberculosis of the lung. He inquired as to the relationship between the various bacterial tests and the presence of bacilli.—Dr. CECIL WALL thought that an actuarial basis was advisable to render the statistical evidence more valuable, and suggested the addition of data as to the average age of the patients under treatment, length of stay in the sanatorium, and duration of the disease. He considered an anatomical classification unsatisfactory, and thought that grouping according to symptoms was of more importance.—Dr. F. PARKES WEBER agreed that the presence of bacilli in the sputum was the only possible criterion on which to base a diagnosis. Many individuals had a certain amount of tuberculosis and yet never became tuberculous patients. These reacted if examined by modern bacterial tests. He considered [illegible]amination by the old method of physical signs, aided by the [illegible]ren rays, should form additional methods of arriving at [illegible]osis.—Dr. H. D. MCCULLOCH doubted whether sana[illegible]the British Isles, owing to the absence of high alti[illegible]ot waste of money, and whether X rays afforded [illegible]ory evidence.—The PRESIDENT said that a com[illegible]n the results of modern sanatorium treatment [illegible]s of hospital treatment and home treatment [illegible]ue would, if procurable, be of considerable [illegible]st.—Dr. BARDSWELL replied.

[illegible] WEBER read a short paper based on five [illegible] pneumonia had developed while arsenic was [illegible]tered therapeutically. He suggested the [illegible] this association being more than mere [illegible] The patients were seriously ill when the [illegible] developed, but the pneumonia was in every case [illegible] form. He thought that possibly the pneumonia [illegible]e related to the arsenic much as herpes zoster is.

HUNTERIAN SOCIETY.

Exhibition of Cases, Skiagrams, and Specimens.

A CLINICAL and pathological meeting of this society was held on Jan. 22nd at St. Bartholomew's Hospital, Mr. A. H. TUBBY, the President, being in the chair.

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MIDLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Endothelioma of Undescended Testis.—Chorion Epithelioma.—Treatment of Obstructed Labour.

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Dr. THOMAS WILSON read notes upon a case of Endothelioma of the Undescended Testis occurring in a male

had been dealt with, as her condition remained fair, the plugging in the abdominal wound was removed, no hæmorrhage occurring. The patient recovered from the anæsthetic at 5.30 P.M. By 6 o'clock the temperature was 104·5°, pulse 130, and respirations 45, but during the next hour she became rapidly worse and died at 7 P.M.

A post-mortem examination was made on Jan. 7th by Dr. C. R. Elgood. The abdomen contained no free blood and no signs of general peritonitis were present. The pancreas showed a large cyst of the size of a Tangerine orange connected with the head and projecting into the greater sac below the transverse colon. The lesser sac contained a little free blood which had oozed from a rent about one inch long in the peritoneum covering that portion of the spleen in relation to the sac. The organ was enlarged and the capsule extensively stripped up by a blood clot corresponding to about 3 oz. of blood lying beneath it. The substance of the spleen was soft and diffluent, and its interior showed numerous large hæmorrhages which communicated in several places with the clot beneath the capsule. All other abdominal, thoracic, and pelvic organs were normal.

A section of the spleen showed large areas of almost complete necrosis. No round-celled infiltration was present, but over these areas the cells were in a condition of cloudy degeneration and in places were reduced to a mere badly staining granular detritus. This state of necrosis was not uniform although widely diffused throughout the organ, in some places perfectly normal splenic tissue being visible. No bacteria were present in Gram-stained sections.

I am indebted to Dr. H. Spurrier, of Maidenhead, under whose care the case was at the hospital, for permission to publish these notes.

Eton.

A CASE OF STRANGULATION OCCURRING IN A VENTRAL HERNIA.

BY F. W. GANGE, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND.

THE following case appears to me to be worth recording on account of the rarity of strangulation occurring in a ventral hernia.

I was called in on Dec. 31st, 1912, to see a married woman who was suffering from severe abdominal pain and constant vomiting. She informed me that the pain and vomiting had been going on for about 24 hours, and that for some weeks past she had been subject to attacks of slight abdominal pain which had hitherto passed off in a few hours. There had been no previous vomiting. There had been a small action of the bowels on the same day. On examination the patient presented an anxious expression. The temperature was normal and the pulse 100. The abdomen was large and pendulous, and there was the scar of an old wound in the middle line below the umbilicus. In the centre of the scar a swelling could be felt which was extremely tender. It was resonant and very tense, and could not be reduced by pressure.

I took the patient into the Faversham Cottage Hospital and operated soon after her arrival. On cutting down over the swelling I found a sac surrounded by very dense scar tissue, containing a small loop of slightly congested intestine and a large piece of matted omentum, the latter adherent to the sac wall. A dense ring of fibrous tissue constricted the neck of the sac. This was divided and the sac and fibrous tissue cut away, as well as the constricted portion of omentum, and the bowel returned into the abdomen. The wound was then closed. The bowels acted immediately after the operation. The patient has made a satisfactory recovery.

Faversham.

A CASE OF SUCCESSFUL RESECTION OF AN IRREDUCIBLE INTUSSUSCEPTION IN A CHILD.

BY C. LEONARD ISAAC, M.B., B.C. CANTAB., F.R.C.S. EDIN.,
ASSISTANT SURGEON TO THE SWANSEA HOSPITAL.

A GIRL, aged 2 years, was sent to the out-patient department of the Swansea Hospital on July 19th, 1911, with the following note: "My little patient has had colicky pain off and on for 14 days with constipation (chiefly). Is said to be passing dark stools. Parents are afraid she has swallowed a coin and are anxious to have her X rayed. ? Cause. Have seen nothing so far to justify diagnosis of intussusception."

I saw the child at about 4 P.M. There was no distension or rigidity of the abdominal walls, but as she was so fretful and restless it was impossible satisfactorily to palpate the abdomen. The child was immediately anæsthetised on her mother's lap, and an elongated tumour was easily felt ascending up the colon where it became obscured by the liver; the lower end could be pushed backwards and forwards towards the middle line. Nothing was felt per rectum. The child was immediately sent into the theatre, and under chloroform and ether anæsthesia the abdomen was opened in the right flank. An intussusception was found extending into the transverse colon; the greater part of this was easily reduced, but the last couple of inches was irreducible. An incision was made into the intussuscipiens and the intussusceptum delivered and snipped off with scissors; the ends of gut were then united as in Maunsell's method, and the opening in the intussuscipiens closed. The appearance of the œdematous circular enterorrhaphy made one anxious as to its immediate permeability, and the child's condition being good the ileum was anastomosed to the ascending colon, the intussusception being an ileo-cæcal one. The abdomen was closed and the patient returned to bed. The bowels moved naturally on the morning after the operation. On admission the temperature was 97·8° F., the pulse 124, and the respirations 30. The temperature ran up to 101° on the second day and 102° on the third day, but from that day on the child made an uninterrupted recovery.

Swansea.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Records of King Edward VII. Sanatorium.—Pneumonia during Arsenical Therapy.

A MEETING of this section was held on Jan. 28th, Dr. FREDERICK TAYLOR, the President, being in the chair.

Dr. NOEL D. BARDSWELL read a paper on the Records of the King Edward VII. Sanatorium. They comprised the records of 1079 patients discharged from July, 1907, to July, 1911. The diagnosis of pulmonary tuberculosis was confirmed by the medical staff in 1027 cases, and not confirmed in 52 cases. Of the 1027 diagnosed by them as cases of pulmonary tuberculosis, tubercle bacilli were found in 82·7 per cent. The diagnosis was not confirmed by the finding of tubercle bacilli in 17·3 per cent. Of these 1027 definite cases, 112 had been lost sight of, and 915 had been traced to October, 1912. Dealing only with the 915 traced to 1912, 764 had tubercle bacilli present on admission, and in 151 no tubercle bacilli were found at any time. As to the condition in 1912 of the 764 with tubercle bacilli present, 437, or 57·1 per cent., were well or alive; 327, or 42·8 per cent., were dead. In Group I. (early cases), 153, or 83·6 per cent., were well or alive; 30, or 16·3 per cent., were dead. In Group II. (moderately severe cases), 220, or 61·6 per cent., were well or alive; 137, or 38·3 per cent., were dead. In Group III. (severe cases), 64, or 28·5 per cent., were well or alive; 160, or 71·4 per cent., were dead. Regarding the condition in 1912 of the 151 in whom no tubercle bacilli were found, 134, or 88·7 per cent., were well or alive; 17, or 11·2 per cent., were dead. Reviewing the significance of the disappearance of tubercle bacilli whilst under treatment, of the 764 with tubercle bacilli present, 148, or 19·3 per cent., lost their tubercle bacilli before discharge. In 1912, of the 148 who lost their tubercle bacilli while in the sanatorium, 124, or 83·7 per cent., were well or alive; 24, or 16·2 per cent., were dead. In Group I.: 69, or 87·3 per cent., were well or alive; 10, or 12·6 per cent., dead. In Group II.: 49, or 89 per cent., were well or alive; 6, or 10·9 per cent., dead. In Group III.: 6, or 42·8 per cent., were well or alive; 8, or 57·1 per cent., dead. In 1912, of 616 with tubercle bacilli present on admission and on discharge, 313, or 50·8 per cent., were well or alive; 303, or 49·1 per cent., dead. In Group I.: 84, or 80·7 per cent.,

were well or alive; 20, or 19·2 per cent., dead. In Group II.: 171, or 56·6 per cent., were well or alive; 20, or 19·2 per cent., dead. In Group III.: 58, or 27·6 per cent., were well or alive; 152, or 72·3 per cent., dead.—Dr. P. HORTON-SMITH HARTLEY emphasised the importance for statistical purposes of dividing the cases of tuberculosis of the lungs into those with tubercle bacilli in the sputum and those without. He raised the question as to the method of diagnosis when bacilli were not present. The presence of a focal reaction after tuberculin injection left little doubt of the truth of the presence of tubercle.—Dr. T. D. ACLAND expressed himself as not satisfied that the presence or absence of tubercle bacilli in the sputum was a fair test of the presence or absence of tuberculosis of the lung. He inquired as to the relationship between the various bacterial tests and the presence of bacilli.—Dr. CECIL WALL thought that an actuarial basis was advisable to render the statistical evidence more valuable, and suggested the addition of data as to the average age of the patients under treatment, length of stay in the sanatorium, and duration of the disease. He considered an anatomical classification unsatisfactory, and thought that grouping according to symptoms was of more importance.—Dr. F. PARKES WEBER agreed that the presence of bacilli in the sputum was the only possible criterion on which to base a diagnosis. Many individuals had a certain amount of tuberculosis and yet never became tuberculous patients. These reacted if examined by modern bacterial tests. He considered examination by the old method of physical signs, aided by the Roentgen rays, should form additional methods of arriving at the diagnosis.—Dr. H. D. MCCULLOCH doubted whether sanatoriums in the British Isles, owing to the absence of high altitudes, were not waste of money, and whether X rays afforded much satisfactory evidence.—The PRESIDENT said that a comparison between the results of modern sanatorium treatment and the methods of hospital treatment and home treatment formerly in vogue would, if procurable, be of considerable value and interest.—Dr. BARDSWELL replied.

Dr. PARKES WEBER read a short paper based on five cases in which pneumonia had developed while arsenic was being administered therapeutically. He suggested the possibility of this association being more than mere coincidence. The patients were seriously ill when the pneumonia developed, but the pneumonia was in every case of a mild form. He thought that possibly the pneumonia might be related to the arsenic much as herpes zoster is.

HUNTERIAN SOCIETY.

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Dr. THOMAS WILSON read notes upon a case of Endothelioma of the Undescended Testis occurring in a male

pseudo-hermaphrodite aged 29. The patient, who had been brought up as a woman, sought advice on account of severe lower abdominal pain and of the passage of blood in the urine, said to be a catamenial period. In the hypogastrium a fairly defined, rounded, tense and elastic tumour extended from the pubes upwards to 2 inches below the umbilicus. The temperature was 100° F. and the pulse 120. Repeated vomiting was also troublesome. The patient had been carrying on an arduous trade in partnership with another woman. The voice was masculine; the cheeks, chin, and upper lip were covered by sparse coarse hair, half an inch in length, forming a rudimentary beard and moustache. The hair of the head was fairly plentiful and nearly 3 feet in length. The patient's figure was markedly feminine, although the breasts were small. The vulva presented an unusual appearance. The labia majora were thin, and between them was a deep cleft in the anterior part of which was a penis-like organ 2½ inches long, with a well-marked glans. A depression, but no orifice, was present on the lower surface of the glans. An inch further back in the middle line was a urethra-like orifice. A catheter passed into this canal met with obstruction after passing about an inch. It then turned upwards and forwards and entered the bladder. In the right labium majus was a small, elastic, tender body, which could be pushed upwards into the inguinal canal. The left inguinal canal and labium were empty. The pelvis was filled with a fixed, tender swelling of the size of a cocoanut. The patient stated that at about 20 years of age she began for the first time to lose blood with the urine, and since then had done so fairly regularly for three days every month. Laparotomy was performed, but complete removal of the tumour was impossible. The patient died a fortnight after the operation, having undergone extreme wasting. Microscopically, the tumour was considered to be an endothelioma developing in relation with the undescended left testicle. The paper was illustrated by a series of microphotographs demonstrated with the epidiascope.—Dr. C. E. PURSLOW asked if there were any records of a case of true hermaphroditism.—Mr. H. BECKWITH WHITEHOUSE thought that the occurrence of periodical hæmorrhages was a point of much interest. He was at a loss to know whence the blood came. Furthermore, if it was a case of true menstruation the supposed necessary hormone must have been produced by the testicle. The only alternative explanation was that the gland in the right labium was an ovary, the case being thus one of true hermaphroditism. As regards the histology of the tumour, he was not quite prepared to admit that it was undoubtedly an endothelioma. It was an obscure neoplasm in which cells of an embryonic type were present, and to which the term sarcoma could be applied. Beyond this, he did not think it was possible to dogmatise.—Mr. F. EDGE agreed with the difficulty raised by Mr. Whitehouse as to the explanation of the alleged catamenia. He suggested that the so-called testicle was in reality an ovary containing various embryological elements, and that what appeared to be seminiferous tubules really consisted of mesonephric ducts.—The specimen was referred to the consideration of the pathological subcommittee.

Mr. EDGE showed a Uterus the seat of early Chorion Epithelioma, and by means of the epidiascope demonstrated microscopical preparations of the same.—Dr. WALTER C. SWAYNE thought that it would be interesting to know definitely in what proportion of cases chorion epithelioma had been preceded by vesicular mole. He imagined that it was far less common than was generally thought. In two cases that had come under his observation a normal pregnancy had on each occasion preceded the development of the tumour. He also wished to draw attention to the fact that occasionally chorion epithelioma underwent spontaneous cure. A deposit would fibrose and become innocuous. A patient of his six years ago who developed metastases to the lungs, with bloody sputum, had recovered completely and was well to-day.—Mr. EDGE agreed with Dr. Swayne's remarks upon the advisability of ascertaining in what proportion of cases chorion epithelioma supervened upon vesicular mole. If it was as much as 40 per cent. of cases, as had been stated, then to him this was an indication to remove the uterus for the latter condition. His experience was that deposits did not fibrose.

Dr. WILSON, in opening a discussion on the Treatment of Obstructed Labour, said that a satisfactory definition of "obstructed labour" was not possible. It was meant to imply the presence of some factor which interfered with the ordinary sequence of events of normal labour. Obstruction was met with in all degrees and gave rise at one end of the scale to a little interference with the presentation of the fœtus, or mechanism and duration of delivery, and at the other, in the absence of skilled help, to the death of the mother and the child. The most frequent cause for neglected cases of obstruction was failure on the part of the patient or midwife to call in medical advice at a sufficiently early stage. Furthermore, there was also a too prevalent idea that the whole art of midwifery consisted in extracting the fœtus, gently if possible, but extracting by any means. The remedy for much of the illness and suffering arising from obstructed labour must be sought in the better teaching of midwifery, which in the future would have to be more practical and clinical than had been possible in the past. By proper care obstructed labour could generally be foreseen and its ill-effects obviated. It was well to regard every labour as likely to be obstructed, or in some other way complicated, for here most emphatically "forewarned is forearmed." Every woman who engaged a medical man or a midwife to attend her first labour should at least have the external pelvic measurements taken. A history of steadily increasing difficulty in successive labours was not uncommon. The explanation was to be found in Matthew Duncan's observations that the birth weight of the children of a woman gradually increases until her age is 35, after which it again diminishes. Another point to note was that contraction at the outlet was more common than was usually understood, and the diameters here should also be measured. Dr. Wilson then drew attention to the importance of "Muller's impression" method in estimating the relation of the size of the fœtal head to the pelvic brim. The method had been slightly modified by Munro Kerr, and was frequently known by his name. Rules were then formulated to guide treatment, adapted to the various conjugate diameters. Cases in which the true conjugate lay between 2¾ and 3½ inches were those which furnished most of the difficult problems. Labour should rarely be induced in a first pregnancy. Frequently a living child was born at term through a pelvis that appeared to offer grave difficulties, and it was good practice to regard the first labour as a test one, and to watch its course and result very closely. At the onset of labour, if difficulty was expected, the importance of a thorough cleansing of the vulva and detailed examination could not be too strongly emphasised. One vaginal examination made on a patient who had been imperfectly cleansed might be fatal to the success of an operation that later became necessary.

Dr. PURSLOW referred to the damage frequently produced by the injudicious use of forceps. Practically every case of badly lacerated cervix was due to a forceps delivery. Some of these mishaps were due to slipping of the blades. Therefore, in selecting an instrument care should be taken to obtain one in which the possibility of this accident occurring was reduced to a minimum. He preferred Milne Murray's axis traction forceps in every way. He also emphasised the great advantage of having a proper anæsthetist present wherever difficult forceps delivery was contemplated. Although craniotomy upon the living child was always to be deplored, he thought that in some cases it was still quite justifiable when local surroundings absolutely precluded the possibility of performing Cæsarean section.

Mr. CHRISTOPHER MARTIN concurred in the importance of selecting a method of treatment in accordance with the patient's surroundings. What was good practice in a properly equipped institution was impossible in a slum, and one was not justified in submitting a mother to risk for the sake of a doubtful child. He thought that reliance could not always be placed upon the previous obstetrical history in guiding future treatment. For example, he remembered the subject of a prospective Cæsarean section for pelvic contraction who delivered herself with ease. He was not an advocate of the operations of symphysiotomy and pubiotomy, and thought that they would eventually fall into disuse. The tendency nowadays was to perform more and more Cæsarean sections. If this operation was undertaken before labour set in the risk was very little more than with ordinary labour.

Mr. EDGE asked if diet could in any way influence the size of the fœtus. He quite agreed with Dr. Purslow's remark

upon the damage done by forceps, but at the same time had seen cases of severe cervical laceration without any instrumental interference. With regard to "suspect" cases of Cæsarean section, he had practised with success a method of delivering the membranes covering the lower uterine segment into the vagina by pushing them through the cervix. He did this to obviate infection, inasmuch as he thought that the membranes covering the internal os and the lower uterine segment were most likely to be contaminated.

Dr. SWAYNE said that with increasing knowledge of the subject the difficulties seemed to be added to. He wished to refer particularly to those cases of elderly primiparæ in whom the pelvic measurements were practically normal, and yet when labour was in progress it was necessary to deliver by craniotomy. The cause of dystocia was undoubtedly due to a rather large child. The difficulty was usually not recognised until labour had been in progress for some time. In such a class of case pubiotomy or symphysiotomy might be valuable, although he was not strongly in favour of either as an operation of election.

Mr. SMALLWOOD SAVAGE thought that symphysiotomy and pubiotomy might be of use in producing some enlargement of the pelvis after forceps had failed, and that these operations should be reserved for such cases. He had performed pubiotomy upon two cases and had been satisfied with the results. Sepsis was undoubtedly a contraindication to the operation, but it was difficult to say which cases were at the time infected.

The PRESIDENT observed that the greatest troubles in the treatment of obstructed labour were usually due to want of diagnosis of position. Frequently forceps were applied to undiagnosed occipito-posterior positions with disastrous results. No speaker had referred to the advantages of version in preventing obstruction. In some cases of flat pelvis he had found it a very easy and effective operation. With regard to Cæsarean section, it would undoubtedly replace craniotomy and become the operation of election and not necessity. Craniotomy performed upon the living child was a barbarous and wicked operation, and should never be entertained. He also referred to the importance of the presence of meconium with a head presentation. It was a sure indication of impending death of the child.

Dr. WILSON, in his reply, thought that it was sometimes difficult to avoid craniotomy upon a living child. Quite recently he had had to choose between this operation and Cæsarean hysterotomy in a case that was obviously infected, and he had preferred the former. He was thus in accord with Mr. Martin's views—viz., save the mother primarily, but if possible save both. In Catholic countries, on the other hand, conservative midwifery of the fœtus was of greater import. As regards diet, he did not think that it had much influence upon the size of the child, although a diet as free as possible from carbohydrates and fluids had been recommended to produce reduction of weight. He had expected to hear something upon pubiotomy in the course of the discussion, and had not been disappointed. Personally he had performed five pubiotomies, and had had no cause to regret the same from the maternal side. The use of this operation would always be reserved for "borderland" cases in which the fœtus was alive. It should not be employed in first labours, nor yet, again, when infection was present.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Exhibition of Cases.

A CLINICAL meeting of this section was held on Jan. 10th, Mr. R. D. PUREFOY, the President, being in the chair.

Mr. W. I. DE C. WHEELER exhibited three cases of Tuberculosis of the Lower End of the Femur in children, illustrating recent pathological and anatomical work. The first clinical sign was thickening of the bone. The specimens removed at operation explained this sign. A tubercular focus appeared centrally in the metaphysis, the congestion extended through the Haversian systems to the periosteum, and a new layer of very porous bone was formed under the periosteum as a result of osteoplastic periostitis. Eventually, by caseation and liquefaction, tubercular pus was produced and found its way through cancellous tissue, cortex, new subperiosteal bone, periosteum, and lastly the soft tissues, to the surface. In each of the three cases shown the disease occurred at the site of election—viz., the metaphysis—and in each case the femur was divided with a Gigli's saw above the diseased area and wrenched from the epiphysis. New bone was rapidly formed, with excellent results. X ray photographs showed the accurate and complete manner in which the new bone replaced that which was removed. The first case was operated upon in 1909, before any work on the subject had been published. Mr. Wheeler referred in detail to the recent work of Styles, Lexer, and others, and acknowledged his indebtedness to the former. The reason the metaphysis and not the epiphysis or diaphysis was the site of election for tuberculosis in bone was an anatomical one. The infection was hæmogenic, and could be traced in most instances to the milk-supply. The epiphyseal, metaphyseal, and diaphyseal vessels all anastomosed in the frail cancellous bone at the epiphyseal junctions (metaphysis), and it was at this site that a tubercular embolus was likely to be, and as a matter of fact was, lodged. Furthermore, the epiphysis in some bones, such as at the elbow, did not commence to ossify during the first years of life, and tubercle never developed in cartilage. For these reasons the common diagnosis of epiphysitis was, as a rule, hopelessly incorrect. Epiphysitis might, of course, occur either in the hip or knee during early ossification, but it was not so common as metaphysitis. The nearer the metaphysis was to the joint the more readily the joint became affected, as was seen in the case of the elbow and hip. Mr. Wheeler said that the results justified the modern operation, and that scraping, curettage, and drainage were unscientific methods only to be employed when there was some special reason for not performing the ideal radical operation.—Mr. W. PEARSON said that some of the points raised were applicable also to the general treatment of osteomyelitis. He did not think that the points in pathology were absolutely new. He considered this method of treatment the only sound method in dealing with a bony cavity of any large extent. Some extension was necessary while the new bone was forming to obviate great shortening of the limb. It would be helpful if one were to be satisfied with a less extensive operation.—Mr. W. S. HAUGHTON said the cases proved the excellence of the operation. The vital point in the treatment was the removal of all disease. X ray photographs should be relied on to ascertain the extent of the disease, and the operation could then be planned precisely.—Mr. R. C. B. MAUNSELL said that in the diagnosis of these cases many were looked on as tubercular which were really septic osteomyelitis, but he had no doubt that afterwards they had become tubercular. He agreed in the removal of all diseased tissue, but he had seen cavities which had not been laid thoroughly flat, and they healed up perfectly well. He thought that certain cases would heal up with a much more modified operation than the total removal of the diaphysis.—Mr. J. BOYD BARRETT and the PRESIDENT also discussed the case, and Mr. WHEELER replied.

Mr. PEARSON showed a child, aged 7, who first came to him about two years ago for creaking in the shoulders, first noticed after an attack of measles. He could ascertain no satisfactory explanation for the condition. Symmetrical crepitations were to be found on moving the scapula. X rays showed nothing to account for this. Massage and fibrolysin injections were tried, but there was no apparent change in the condition. The crackling was quite audible. He suggested that there might be cartilaginous formation or exostoses, which might be so small as not to be shown by X rays. He thought there was nothing in the muscles to account for the peculiarity, and there was certainly nothing in the joint.—Mr. MAUNSELL would be inclined to look on the condition as purely hysterical.—The PRESIDENT looked on the case as of rheumatic origin.—Mr. WHEELER would not like to make a diagnosis, but suggested the possibility of some myositis ossificans.—Mr. PEARSON replied.

Mr. MAUNSELL showed a female upon whom he had operated on August 3rd, 1912, for cure of a large Aneurysm of the Abdominal Aorta near the cœliac axis. Before operation the aneurysm had a diameter of over 7 inches, pulsated violently, and caused so much pain that the patient had to be

given frequent injections of morphia. There was a regurgitant bruit heard over the mitral area and a loud, harsh, systolic bruit all over the epigastric swelling and over the aorta below it. At operation the wall of the aneurysm was thin and extremely tense. The operation consisted in abdominal section and the insertion of a Colt's wire wisp measuring 5 inches and containing 155 inches of wire having a surface area of 3½ square inches. On the eighth day after operation she was allowed fish, &c., and on the eighteenth day she was allowed to sit in a chair, but she did not leave hospital until Nov. 5th as she would have had to work for her living as soon as discharged. Her present condition was excellent; she was free from pain and able to do ordinary work, including scrubbing floors. There was a firm, hard mass of about 3 or 4 inches diameter to be felt in the epigastrium with transmitted pulsations from the aorta, but no distensile pulsation. The loud bruit over the aneurysm had disappeared. X ray examinations did not show any distensile pulsation.—Mr. C. A. K. BALL and Mr. WHEELER discussed the case.—Mr. MAUNSELL, in replying, said that though Wassermann's reaction had not been done, he had no doubt the case was of syphilitic origin.

Mr. BARRETT showed a child with Webbed Fingers and Six Toes on Each Foot. It was not proposed to do anything more than remove the outer toe. The hand, however, appeared to offer great possibility for improvement. Postponing treatment until the fifth or sixth year was, he thought, a mistake. In the present case, where two of the fingers were adherent, there would be interference with the growth. The operation proposed for the fingers was Didot's, and in the parts that were not covered skin-grafting. As to the difficulty of keeping the graft on in the case of such a small child, a little silk round the finger had proved very helpful in such cases.—The PRESIDENT and Mr. MAUNSELL discussed the case, and Mr. BARRETT replied.

SECTION OF PATHOLOGY.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Jan. 3rd, Professor A. H. WHITE, the President, being in the chair.

Dr. W. G. HARVEY, who showed a patient suffering from Norwegian Scabies, said that he was indebted to Dr. Wallace Beatty for permission to show the case and for his notes and references to the literature. The patient was a man aged 39. His family history revealed nothing of importance and his general health had always been good. He had to give up work owing to the condition of his hands. The eruption commenced ten years ago on his hands and fingers, and remained limited to his hands till about eight or ten months ago, when it began to involve his body generally. About two years ago his hands were X rayed, the condition having been probably regarded as a form of hyperkeratosis. Latterly he had been tormented with itching, which kept him awake at night. The condition when first seen was stated to be as follows. The scalp was covered with abundant dry, greyish scales, forming in places a thick coating resembling psoriasis. There was some scaling on his forehead. The trunk was universally reddened (erythrodermia), the skin was somewhat thickened, especially of the back, and the surface was covered more or less abundantly with dry scales, causing roughness in most places, but on certain prominent parts—on the shoulders over the scapulæ—the scales formed a thick, dry, hard, adherent coating, and places on the back showed traces of moisture suggestive of an eczematous state. The skin of the abdomen was universally reddened, thickened, and rough. There was an extremely heavy coating of dry adherent scales on the prominences of the hips over the trochanters and on the buttocks; this coating was subsequently removed with extreme difficulty. The extensor aspect of the elbows was covered with thick, heaped-up, dry, adherent scales; the arms showed patchy redness and scaling, but were not universally affected. The hands and fingers presented projecting masses of dry, greyish scales over and round the localities of the nails. Here and there on the dorsum and borders of the hands and on the wrists were hemispherical, dry, dirty, scaly masses, averaging about 1 centimetre in diameter They were readily detached once the edges had been raised all round. The skin of the thighs and legs was partially affected, the affected places being reddened and rough. The flexor aspect of the knees was most affected. The nails and their surroundings of the toes were affected in a similar, but slighter, degree to the fingers. Scaly projections covered the disorganised nails; scaly masses were also present here and there on the feet.

Mr. WILLIAM PEARSON showed a specimen of Villous Adenoma of Rectum from a female, aged 56, who was admitted to the Adelaide Hospital complaining of piles with attacks of diarrhœa and hæmorrhage. She had enjoyed good health up to a year previously, when irregular attacks of diarrhœa commenced, alternating with constipation. The attacks were accompanied with some protrusion of the bowel. The motions were offensive, and contained large quantities of mucus and frequently bright red blood. There was no pain or vomiting. The patient was a good colour, but stated she had been losing weight. The abdomen was distinctly full, soft, and somewhat doughy. Distended coils of small intestine were clearly seen against the abdominal wall, and the colon was full and tympanitic, with some fæcal masses palpable. No visible peristalsis was observed. Altogether the abdomen suggested chronic intestinal obstruction in the lower bowel. On rectal examination no hæmorrhoids could be found, but the entire mucous membrane, which could be reached by the finger, felt soft and hypertrophied, with numerous polypoid masses. No obstruction was met with, but the clinical picture was so suggestive of carcinoma of the colon that it was decided to make an exploratory abdominal incision. This was done through the left rectus muscle, when an enormously distended atonic colon and cæcum were found, and it was seen that no growth existed above the rectum. The abdomen was then closed, and the specimen was removed per anum by drawing it down and excising it after the manner of Whitehead's operation for hæmorrhoids. It stripped easily off the muscular coats of the bowel. The specimen proved to be an unusually large villous adenoma. Innumerable fine branching processes were to be seen springing from the mucous membrane. These lay so closely packed that their depth was only apparent by holding the specimen under a tap of running water. They closely resembled in appearance the ordinary villous tumour of the bladder. The tumour was quite soft, save in one small area near the centre, where the villi were much less pronounced and slight induration could be felt. There was no involvement of the submucous tissues. Microscopic examination showed no malignancy. Since the operation the patient has been quite free of symptoms, and control over the bowels is perfect.

Mr. R. M. BRONTE showed two cases of Thoracic Aneurysm. One had ruptured into the pericardial sac, the other was a dissecting-room specimen. It showed an aneurysm on both sides of the thorax, the left side dilatation causing extensive compression of upper lobe of lung. Both cases were associated with extensive pleurisy.

Mr. T. T. O'FARRELL showed a specimen of Rupture of the Right Ventricle. The patient was brought in dead to St. Vincent's Hospital. He was a man of about middle age who, while cleaning the top windows of a hall, slipped and fell a distance of 62 feet, passing through an inner glass roof. He is said to have fallen on his shoulders and then rolled over. Death was instantaneous. Post-mortem examination showed the head to be normal. There was slight prominence of the second lumbar vertebra. The following injuries were found: Contusions at inner side of the right knee and ankle; supracondyloid fracture of the left humerus; Colles's fracture, left wrist; comminuted fracture, lower end of left tibia and fibula, involving ankle-joint; deep incised wound of sole of left foot. The condition of the abdominal organs was practically normal. An examination of the thorax showed fracture of the second and third left costal cartilages, fracture of the sixth rib on right side, fracture of sternum at junction of first with second part. Anterior mediastinum contained a gelatinous blood-stained fluid. The pericardium was adherent to the sternum, but not to the heart, and was found full of blood, though not greatly distended. The heart showed some excess of fat, and was contracted. The right ventricle was injured in two places: first, an irregular semicircular wound 1¾ inches long, beginning below the origin of the pulmonary artery and extending downwards more or less parallel to, and with its convexity towards the inter-ventricular groove; second,

a punctured wound half an inch in diameter slightly below the auriculo-ventricular groove and at the point of junction between the middle third of a line drawn from the margo acutus to the inter-ventricular groove.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 21st, Dr. F. W. Eurich, the President, being in the chair.—Dr. William Wrangham read a paper on Poisoning, which was considered chiefly from the point of view of diagnosis. The medico-legal aspect was also gone into. Poisoning might be (*a*) suicidal, (*b*) accidental, or (*c*) homicidal. If suicidal, clear evidence was, as a rule, not wanting. Generally the poison was known or the symptoms were convincing. If not, or should the patient be found dead, the stomach contents must be investigated. In these cases, although legally required to inform the police, it was not always in the interest of the patient to do so. In most cases of accidental poisoning the fact that the patient had been poisoned would be quite clear; as, for instance, after partaking of poisoned food when the symptoms appeared suddenly, and perhaps more persons were similarly affected. In the cases where medicine had been taken by mistake, the facts were stated readily enough, and every assistance given to the medical man. In chronic cases, such as the Manchester epidemic of arsenical poisoning from beer, it was the cumulative evidence of numbers of individuals affected which led to detection. Lead poisoning from water came under the same heading. With regard to homicidal poisoning, in acute cases and in those where death ensued, the diagnosis was as a rule fairly clear. In chronic cases, as, for instance, arsenical poisoning, the medical man was often in great difficulty, and the question as to the advisability of informing the relatives or the police in such cases was very minutely gone into by Dr. Wrangham.—The paper was discussed by Dr. R. Honeyburne, Dr. A. C. F. Rabagliati, Dr. R. A. R. Lankester, Dr. H. Angus, Dr. G. Hughes, Dr. S. Lodge, and the President.—Dr. Wrangham replied.—Dr. Honeyburne read a paper on Toxæmia. Toxic poisoning in some shape or other was met with in all of the following morbid processes: (1) All the specific infective fevers; (2) diseases of animal parasites; (3) chronic intoxication—e.g., alcohol, lead, or arsenic; (4) food poisons (fish, meat, or cheese); and (5) diseases of metabolism (gout, diabetes, or uræmia). The toxæmias of the specific infective fevers were taken as an example, and particularly of diphtheria as being the one about which most was known. After reviewing the state of knowledge as to the diphtheria bacillus, and explaining the formation of endotoxins and exotoxins and the action of antitoxins, Dr. Honeyburne pointed out that it was only in the case of the exotoxins that antitoxin was formed, and unfortunately the exotoxins only occurred in man in diphtheria and tetanus. He then went on to discuss anaphylaxis, explaining the cause and showing how it might be avoided. He next described the bactericidal substance in the blood, which caused the destruction of the invading bacilli, and which was made up of two separate ingredients—the amboceptor and the alexin or complement. A short account was then given of the agglutinating substance and of opsonins.—The paper was discussed by the President, Dr. Angus, Dr. Lodge, Dr. Lankester, Dr. Wrangham, and Dr. Hughes.—Dr. Honeyburne replied.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 17th, Dr. Arnold W. W. Lea, the President, being in the chair.—Dr. H. R. Clarke (Manchester) showed a case of Uterine Endothelioma arising from the mucous membrane near the entrance of the left Fallopian tube.—Dr. A. J. Wallace (Liverpool) showed lantern slides illustrating three cases of Chorion Epithelioma which he described at the last meeting.—Dr. A. Stookes (Liverpool) read a paper on Some Points in the Puerperal Mortality. For the last 10 years, he said, the average death-rate from puerperal sepsis had been 1 per cent. in Liverpool, and the average for England and Wales 1·7 per cent.—Dr. M. Moritz (Manchester) read a paper on the Nature of the so-called Ligaments of Mackendrodt. By means of dissections and drawings he conclusively showed these ligaments so-called to be perivascular tissue surrounding the vessels supplying the uterus, and not separate ligaments.

Reviews and Notices of Books.

Kidney Diseases. (Oxford Medical Publications.) By W. P. HERRINGHAM, M.D. Oxon., F.R.C.P. Lond., Physician to St. Bartholomew's Hospital, &c. With chapters on Renal Diseases in Pregnancy by HERBERT WILLIAMSON, M.D. Cantab., F.R.C.P. Lond., Assistant Physician-Accoucheur to St. Bartholomew's Hospital, &c. London: Henry Frowde and Hodder and Stoughton. 1912. Pp. 378. Price 15*s.* net.

IT may be doubted whether until recently the medical diseases of the kidney have received a degree of attention commensurate with their frequency and importance. Our knowledge of the surgical diseases of these organs has been greatly increased by careful and laborious clinical work, and by the application of special methods of investigation in regard to the functional efficiency of one or both kidneys. Recently, however, a great deal of work upon some of the problems of nephritis has been done, and the pathological features have been studied in experimentally induced nephritis. An up-to-date text-book upon the subject has long been wanting, and this Dr. Herringham has provided in the interesting, instructive, and practical book under review. It is essentially clinical in its point of view, though pathological considerations are carefully and fully discussed. Dr. Herringham, in a modest preface, states that his book is the outcome of many years of work, the examples being drawn chiefly from his own hospital and his own wards. It is obviously the result of a wide experience and of a thoughtful and critical study of a large number of cases. Dr. Herringham takes little or nothing for granted, and examines each manifestation of each individual disease in the light of his own experience as far as possible. The consequence is that his book is readable, suggestive, and informing.

The first few chapters deal with anatomical, physiological, and pharmacological considerations, and contain a review of the normal and abnormal constituents of urine. An interesting summary is given of the principal facts relating to cyclic, physiological, or functional albuminuria, which is described under the heading of "chronic intermittent albuminuria in the young." Dr. Herringham concludes that no case should be diagnosed as physiological until all possible evidence, both of renal disease and of cardio-vascular and retinal changes, has been examined, and that no case should be so diagnosed in persons over 30 years of age. The methods of examination of the renal function are next briefly discussed. An interesting chapter is that devoted to hæmaturia, in which the conditions of family hæmaturia and essential hæmaturia are carefully described. The condition of hæmoglobinuria is then considered, and an interesting account is given of the condition of paroxysmal hæmoglobinuria, several cases being described in more or less detail, while the pathology and treatment are carefully discussed. A chapter on dropsy, essential dropsy, and uræmia follows. The condition described under the name of essential dropsy is that in which a dropsy of renal type occurs without albuminuria or the other evidences of nephritis, and it is regarded by Dr. Herringham as of great interest in connexion with the pathology of renal dropsy, as showing that it is not the actual lesion of the renal epithelium which is the immediate cause of that form of dropsy.

The difficult subject of nephritis is considered in a manner which is worthy of special notice and commendation. The classification suggested by Dr. Herringham is simple and rational, and is, moreover, supported by a weight of pathological and clinical evidence. He recognises acute

nephritis, which he believes is always diffuse in character, affecting in varying degree the convoluted tubules, the glomeruli, and the interstitial tissue. His next group is that of subacute and chronic diffuse nephritis, which comprises those forms of renal disease which are variously termed chronic parenchymatous nephritis, large white kidney, contracted kidney, and small pale kidney, in all of which the changes in the kidneys, as in the acute variety, are diffuse. Although the various forms comprised in this group show different histological characters and also differences in clinical manifestations, Dr. Herringham maintains that to separate them into distinct entities is artificial. The third group or class of cases is that of chronic interstitial nephritis. It is here maintained that the pure interstitial form of nephritis is identical with the arterio-sclerotic kidney, and is in reality a disease of the circulatory system rather than of the kidney. Any case of granular kidney in which there are parenchymatous changes is to be regarded as an example of chronic diffuse nephritis. These views are supported in a clear and closely reasoned manner, and they seem to us to simplify the subject considerably. The treatment of these conditions is described in a full and practical way, the recommendations made being carefully explained, with many useful practical details. A special chapter is given up to the subject of polycystic disease of the kidneys.

An important feature of this book is afforded by the chapters on renal diseases in pregnancy contributed by Dr. Williamson. The first of these deals with those forms which are dependent upon toxæmia, and includes an interesting account of eclampsia. The second is devoted to pregnancy and chronic nephritis, the third to hæmaturia in pregnancy, and the fourth to pyelitis and pyelonephritis in association with pregnancy. These subjects are dealt with in a scientific and clear manner, and special emphasis is laid upon their pathology and treatment. The remaining chapters are contributed by Dr. Herringham, and are concerned with pyelitis and pyelonephritis in conditions other than pregnancy, hydronephrosis, hæmatonephrosis and pyonephrosis, syphilis, tuberculosis and lardaceous degeneration, and renal tumours.

An index of subjects and another of names complete what is a noteworthy addition to the text-books devoted to special subjects in medicine, and one which should be of great value to the practitioner as well as to the student.

A Text-book of Pathology for Students of Medicine. By GEORGE ADAMI, M.A., M.D., F.R.S., Strathcona Professor of Pathology, McGill University; and JOHN MCCRAE, M.D., M.R.C.P., Lecturer in Pathology and Clinical Medicine, McGill University, Montreal. Illustrated with 304 engravings and 11 coloured plates. London: Macmillan and Co., Limited. 1912. Pp. 759. Price 25s. net.

THIS work is not a lengthy excerpt from Professor Adami's "Principles of Pathology," but, on the contrary, the reader will find considerable evidence of modification. Instead of the two well-known volumes on general and special pathology by Adami, the joint authors offer a text-book which contains within the covers of a single volume the gist of the subject. They endeavour to embody the features of the former work and follow its lines, but make no attempt to epitomise the different sections, rather selecting and dwelling upon what they regard as most important for the student. The teaching is given in much the same order as in "General Pathology," save that a chapter upon pain and its significance is added. The second part deals with "Special Pathology," and in the treatment of this section the authors state that they "have laboured with greater effort to give an adequate presentation" of the subject, and to that end they have written it apart without reference to the earlier volume. Some 200 new and original illustrations have been introduced.

About one-half of the whole text is devoted to general pathology. The introduction on cells and tissues is much on the usual lines. Over 50 pages are allocated to the causes of disease. It is pointed out that while we are finding out one direct cause after another of disease we tend to lose sight of the predisposing or assisting causes, and pneumonia is made the text on which to hang an account of the doctrine of "lessened resistance," under which term we hide our ignorance. Inherited pathological states, monstrosities and abnormalities, post-natal acquirement of disease, parasites, and modes of infection are considered in turn. The protozoa as causes of certain well-known diseases are discussed, as are amongst metazoa certain worms as parasites. Insects and spiders are considered both as causes and carriers of disease. Under the heading "Endogenous Intoxication" the doctrine of internal secretions is dealt with, and then disintegrative intoxications or autolysis. The chapter on bodily states as direct and predisposing causes of disease is particularly well worth reading, more especially as it deals with overstrain. Next, the all-embracing and perennial subjects, the local reactions to irritation and inflammation, are dealt with; systemic reaction to microbic injury and infection leads the reader to thermogenesis and pyrexin; then follow immunity and its theories, while syncope, shock, and collapse, and the new chapter on pain, bring the reader to p. 184 of the text. Under progressive tissue changes we should like to have seen a fuller account of Wallerian degeneration. In connexion with Carrel's recent transplantation experiments, to which a few lines are given, it is stated that there is an almost insurmountable tendency to subsequent atrophy and degeneration. The account of tumours is straightforward and sufficient. Perhaps the account of regressive tissue changes is even more interesting. Beginning with normal histolysis and cytolysis, the degenerations and infiltrations are next considered, and the illustrations are both numerous and well executed, and especially interesting are the views regarding calcification of tissue and the formation of gall-stones. The part dealing with general pathology closes with a little over a page on death.

Instead of "special" pathology the authors prefer the term "systemic pathology," which subject they have "painfully epitomised" to bring everything within the covers of a single volume. The cardio-vascular system, including blood and lymph, occupies about 100 pages; the illustrations are taken from Cabot. The *résumé* on blood is practical and of adequate proportions. Having regard to the fact that the striking progress made during the last few years in the comprehension and treatment of heart disease has been pre-eminently advanced by the study of normal and perverted functions, the authors devote a well-considered and terse chapter to cardiac function and its disturbances. This chapter will well repay perusal. Perhaps a more explicit account of Porter's experiments on the heart muscle would have been useful. In discussing "heart block" the question is asked, Were Napoleon's "epileptic" attacks manifestations of this condition? This is a subject to which much interest is being attached at this moment. There is a full account of the important subject of arteriosclerosis, but the respiratory system is discussed in about 50 pages, and only 50 pages more are required to deal with the nervous system and the sense organs. This latter chapter seems to us certainly rather too short, and the illustrations are relatively few considering the complexity of the subject. About 80 pages are given to the digestive system, both illustrations and text being good. The urinary and

reproductive systems occupy about 70 pages, and we are glad to see that the latter system receives comparatively full treatment. The chapter on motor and tegumentary systems brings the work to a close. There is a very full index.

The authors have produced an epitomised yet comprehensive exposition of pathology as understood in recent times—an exposition which practitioners of an older date will read with profit, while the student will find in it just what he requires, both for his instruction and as a solid basis for future work. We congratulate the authors on the results of their labours, and the publishers on the excellent get-up of the text-book.

Manual of Surgery. By H. ALEXIS THOMSON, F.R.C.S. Edin., and ALEXANDER MILES, F.R.C.S. Edin., Surgeons Edinburgh Royal Infirmary. Fourth edition, revised and enlarged. London, Edinburgh, and Glasgow: Henry Frowde and Hodder and Stoughton. 1912. Vol. II. Pp. 924, and 274 illustrations. Vol. III. Pp. 565, and 220 illustrations. Price 10*s.* 6*d.* each volume.

THE surgery of Thomson and Miles is well known to all surgeons of the British Isles, and to a very large proportion of our medical students. The work in its present form is divided into three volumes in place of two, the third volume dealing with operative surgery. The clearness of the descriptions in both volumes is admirable, the illustrations are good, and the student can have no more useful text-book for his general reading. The third volume is to a great extent new. In the earlier editions of the work somewhat brief accounts were given of the operations mentioned in the treatment of disease, but in this issue the accounts of operations are excluded from the text of the volume dealing with regional surgery, and have been put together in a greatly expanded form in the third volume, which thus becomes a manual of operative surgery. It includes an account of practically all the operations which are usually performed at the present day, including even such modern operations as the suture of arteries, and with its adequate illustrations becomes a most valuable text-book. A chapter on anæsthetics, revised by Dr. J. Stuart Ross, concludes the volume, whose addition has made the work much more complete. This whole treatise on surgery as a text-book for students is not surpassed by any other produced in the English language.

Treatise on General and Industrial Chemistry. By Dr. ETTORE MOLINARI. Third revised and amplified Italian edition. Translated by Dr. ERNEST FEILMAN, B.Sc., Ph.D., F.I.C. Vol. I., Inorganic. London: J. and A. Churchill. 1912. Pp. 704. Price 21*s.* net.

WE do not recollect that this important work by the distinguished Professor of Industrial Chemistry to the Society for the Encouragement of Arts and Manufactures and of Merceology at the Commercial University Luigi Bocconi at Milan, was ever rendered into English before, the present volume being a translation of the third Italian edition. We have very little doubt, however, that this translation will be welcomed by English readers, as it will be found to reflect largely the position of industrial chemistry in Italy, the country which produced such eminent exponents of chemical science as Avogadro, Cannizaro, Gabba, and Ciamician. "If anything," writes the author, "is to be attempted in Italy it should not be an imitation of that which has been done in other countries in the past, but should start at the point at which other countries have arrived in order to proceed otherwise and profit by the experience of others." This is the admirable attitude preserved throughout the volume.

The plan of treatment may be gathered from a synopsis of the divisions. In Part I. theoretical considerations are clearly set out. In Part II. the non-metals come under review, and in Part III. the metals in group order. The subject matter is approached mainly from a technological point of view. Thus there are excellent sections on the recovery of metals from their native compounds, the method of manufacture of soda, bleaching powder, glass, superphosphate, carbide, and other chemical articles of commerce, the purification of water-supplies on a large scale, and on many other processes of industrial importance. These monographs are the more valuable inasmuch as they give the statistics of the world's production of chemical products up to, in most cases, 1909, their market value and their uses and applications in the arts and industries.

We regard the book as one which may be placed in the hands of the student contemplating any technological career with decided advantage, while it will prove a trustworthy source of reference to those curious to know the great facts connected with an enormous branch of industry. It serves to draw attention incidentally also to the extremely important position which chemical industries now occupy in human affairs, for the progress and well-being of which, indeed, they have become virtually essential.

Syphilology and Venereal Disease. By C. F. MARSHALL, M.D. Vict., M.Sc., F.R.C.S. Eng., Surgeon to the British Skin Hospital, late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars. Second Edition. London: Baillière, Tindall, and Cox. 1912. Pp. 560. Price 10*s.* 6*d.* net.

THE first edition of this work was published six years ago, and in that interval much progress has been made in the study of syphilis and gonorrhœa, and the author has endeavoured to include in this edition all the important facts which have been added to our knowledge. The book commences with an interesting dissertation on the origin of syphilis, where Mr. Marshall takes the view that the disease was not introduced into Europe by the sailors of Columbus, but that it had existed in Europe previously. The matter cannot be considered settled. The succeeding chapters contain a good account of the disease, both generally and as it affects the different systems of the body. An interesting chapter is that in which the author discusses the question of the possibility of syphilis of the third generation, expressing his opinion that the occurrence is, in fact, not uncommon, though this is not the received view at the present time. The account of the treatment is satisfactory, but here it must be noted that the author has not a very high opinion of salvarsan. The last section of the book deals with gonorrhœa.

The work gives a useful account of most venereal diseases, and is evidently the outcome of a large experience.

LIBRARY TABLE.

Modern Problems. By Sir OLIVER LODGE, F.R.S. London: Methuen and Co. 1912. Pp. 320. Price 5*s.* net.—The writings of Sir Oliver Lodge are always conspicuous for three qualities: they are written in simple and clear English, they are informing, and they are interesting. The 21 essays in the work now before us have been, says Sir Oliver Lodge in his preface, "written at different times on debatable subjects ..... and they deal with problems of permanent interest." Among the subjects included are such as the Nature of Time; the Responsibility of Authors; Some Social Reforms; the Production and Sale of Drink; the Smoke Nuisance; Universal Arbitration and How Far it is Possible; and the Irrationality of War. The essay on the Nature of Time will, we think, for many readers throw a new light upon a matter which most of us think that we apprehend, but which, if we consider it deeply, we shall find that we do not. Most of us are in the position pointed out to Esdras by the angel: "Thine own things that are grown up

with thee, canst thou not know." Although, as Sir Oliver Lodge points out, we apprehend time instant by instant, we conceive it as a uniformly flowing entity; and again, "time is a uniformly flowing quantity ..... a uniform rate of conversion of the future into the past." Some of us may be aided in the apprehension of this fact by remembering the White Queen's rule, "Jam to-morrow and jam yesterday, but never jam to-day." As Sir Oliver Lodge quotes various paradoxes to illustrate his argument, so we do not hesitate to quote an apparent absurdity written by one who was a profound mathematician as well as a writer of stories for children. The paper upon Some Social Reforms is one of the most interesting in the book; everyone will not agree with all of Sir Oliver Lodge's propositions, but there is no one who will not cordially endorse his contention that social reforms are badly needed, and one of his propositions is worthy of remembrance at the present juncture: "Social progress is only sure and lasting when the average citizen is ripe for it, when he is carried along by the reformers and realises the benefit of what has been done. Society cannot be reconstructed from outside; it must be reconstructed from within; it must in a manner reconstruct itself, or it will be unstable." The problem, continues Sir Oliver Lodge, deals with self-conscious and free agents: "They cannot with wisdom be coerced, they must be led; and this process takes time, and is the reason why progress is so slow." Considerations of space forbid us dealing with all the essays in this book, but it is a work which we can exhort all our readers to study, for there is not one essay which does not carry its message for them, whether in their capacity as medical men or as citizens.

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Jahreskurse für Aerztliche Fortbildung. November and December, 1912. Munich: Lehmann. Price 18 marks per annum.—The first article in the November number of this Annual Post-Graduate Course is a general review of Ophthalmic Surgery by Professor W. Krauss. The influence of heredity on various diseases of the eye is discussed, with special reference to coloboma. The diagnosis and treatment of eye troubles by sera and vaccines are next mentioned, as the Wassermann reaction for syphilitic iritis, keratitis and choroiditis, and von Pirquet's test for tuberculous conditions. Phlyctenular conjunctivitis appears to be a tuberculous infection. The changes produced by sun-blindness and the eye symptoms of Graves's disease are also discussed briefly, and there are a few notes on sympathetic ophthalmia and trephining of the sclerotic for glaucoma.—Professor Gluck and Dr. Soerensen contribute a valuable paper on the Surgical Treatment of Carcinoma of the Larynx, and a number of photographs are included showing the operation for total extirpation of the larynx. It is of the greatest importance to exclude absolutely the airway after this operation from the mouth, pharynx, and cavity of the wound. One way of securing this is to divide the trachea at a previous sitting and bring the stump out through the skin of the neck. This prevents aspiration pneumonia following. The indications for the radical operation are set forth in some detail, and the technique described both for that and also for hemilaryngectomy and for simple thyrotomy, with the after-treatment. With regard to the results of treatment, they report from their own practice 40 cases of thyrotomy with 2 deaths; only 2 have recurred. Hemilaryngectomy has been performed 48 times, with 3 deaths and 16 recurrences. Of 160 cases of total laryngectomy, the last 63 have all survived, but the total number of deaths is not given. Twenty-four cases are known to be alive and well more than four years after the operation, and 21 cases more than two years after. Total laryngectomy with resection of the pharynx has been performed 84 times, with 21 deaths, but when the pharynx and œsophagus are involved the malignity is greater. The article concludes with an account of some artificial larynxes.—Professor W. Kümmel writes on Otology, and amongst other subjects reviews the intracranial complications of ear disease and the causation of deafness associated with dumbness. He shows how much more fatal an abscess is in the cerebellum than in the cerebrum, even in cases where pus is found.—Professor Dieck contributes an article on the Pathology and Diagnosis of Dental Diseases, illustrated by some interesting skiagrams.

The December number is devoted to surgery, forensic medicine, and accidents in relation to insurance. Professor Borchardt selects the subject of the Brain and Nervous System as his theme on surgical progress. The diseases of the cerebellum and their treatment are described. The experimental ablation of one cerebellar hemisphere gives rise to temporary muscular disturbances and to the more permanent cerebellar ataxia, made up of the three elements of weakness or asthenia, loss of tone, atony and uncertainty of movements in walking and standing (astasia). There is recent evidence to show that some localisation of function is possible in the cerebellum similar to that in the cerebrum. The special characters of the vertigo and auditory disturbances associated with cerebellar disease are mentioned, as described by Bárányi. It is held that valuable diagnostic information may be obtained by exploratory puncture of the cerebellar hemispheres. Of about 100 cases of glioma of the cerebellar substance in which radical operation has been performed only about 20 have had lasting recovery. Of cerebellar cysts five varieties are recognised—viz., parasitic, hæmorrhagic or degeneration, serous, dermoid, and outgrowths from the ventricle. All are suitable for operative relief except the last. The two-stage method of operation is recommended, the first stage of turning down an osteoplastic flap being done under novocaine and adrenalin local anæsthesia. When the site of the tumour is doubtful it is advised to expose both hemispheres from the outset, after ligature of the occipital sinus. The operation of resection of the posterior spinal nerve roots for spasticity and visceral crises, suggested chiefly by Foerster, is discussed in some detail and the results spoken of in high terms. Stoffel's operation for spasticity is also described. It depends upon the fact that the fasciculi of each motor nerve to the several muscle groups retain a constant relation to one another and that this may be determined both by dissection and by stimulation. Resection of certain fibres of such a nerve will diminish the contractility of the muscles to which it goes. In the treatment of paraplegia due to tuberculous disease of the spine attention is directed to the importance of the operation of costo-transversectomy, whereby the abscess at the side of the vertebral body can be evacuated.—Dr. Schöne gives a brief review of various

surgical topics. Of these the most important are:—1. The Present Position of Skin Disinfection. It is held that the value of the iodine method has been abundantly proved, and that this depends not so much on the action of iodine in killing or fixing bacteria as upon its power of calling up a local leucocytosis by which wound infection is prevented. 2. The Transplantation of Tissues and Organs. In general terms the opinion is expressed that although homoplastic or even heteroplastic grafting often succeeds experimentally, it is doubtful whether these methods can attain any wide practical application. This is partly due to the difficulty of finding another individual from whom to take the graft, and partly to the fact that in many cases the graft does not in reality live, but merely forms a dead framework upon which new tissue is built up. Instances are given in which the following tissues have been transplanted successfully: the superficial layers of the cornea; pieces of the fascia lata to close large hernias and defects in the dura; tendons; fat masses in order to fill up depressed scars or to interpose between the surfaces of resected joints; bones, especially to make good the loss after tuberculous and myelomatous disease; joints of the toes, hip-joint (the graft taken from a corpse), knee-joint (graft taken from a freshly amputated limb), thyroid gland, parathyroids, and ovaries. 3. The Direct Suture and Implantation of Blood-vessels. Murphy's, Carrel's, and Payer's methods are described, Carrel's being regarded as the best and the one which has been followed by the best results. 4. The Operative Treatment of Fractures. The method of Codivilla and Steinman of extension by means of a transfixing nail is described and its merits fully recognised in cases of malunited fracture or those difficult of reduction. 5. The Differential Pressure Methods of Brauer and Sauerbruch in the surgery of the chest. The possibility of direct attack upon tuberculous lesions of the lung and bronchiectasis by these means is shortly reviewed.—Professor Puppe writes under the heading of Forensic Medicine, about poisoning by margarine contamination and by methyl alcohol; the rupture of the tentorium cerebelli in infants and adults without fracture of the skull; and the value of the hæmochromogen crystals in the recognition of bloodstains.—Professor Thiem and Dr. Jellinek conclude with some short articles on Insurance Problems, particularly the effects of limb injuries and electrical accidents upon working capacity.

The Journal of Laryngology, Rhinology and Otology.—The December issue opens with an editorial on "The Massacre of the Tonsil." Under this title Dr. John N. Mackenzie, of Baltimore, contributed an article last September to the *Maryland Medical Journal*. An abstract of the article is given, and is one of a symposium of abstracts of papers recently written on the tonsils, their function, their diseases, and their treatment.

Schmidts Jahrbücher der In- und Ausländischen Gesamten Medizin. Edited by Professor Dr. H. LEO. Vol. CCCXV., Part 3: September, 1912. Bonn: A. Marcus and E. Webers Verlag. Pp. 114. Price 36 marks per annum.—The first 11 pages of the last issue of Schmidt's Year-books of all Departments of Medicine, both German and Foreign, are devoted to synopses of (*a*) 15 articles on scarlet fever published in various periodicals during 1911 and 1912, and (*b*) 128 similarly published articles on the physiology and pathology of the digestive organs. These are followed by a collection of 691 extracts treating of a multitude of subjects and taken from a great variety of periodicals. The next 68 pages are occupied by a bibliography consisting of the titles of papers published in medical periodicals, together with the names of the authors. By the system adopted about 54 titles of papers appear on each page.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

AMMONIUM ICHTHYOL.

(ICHTHYOL GESELLSCHAFT, CORDES HERMANNI AND CO., HAMBURG. LONDON AGENTS: WILLIAM CHARITY AND SONS, 14 AND 15, HARP-LANE, E.C.)

Ichthyol ammonia has been before the profession for some time, but it is interesting to record that in the treatment of many affections it still gains favour, while additional experience has shown that its therapeutic applications have widened. Its origin is of interest. Ichthyol is a crude oil obtained by the destructive distillation of a deposit of fossil fish found near Seefeld in the Tyrol. A basic oil is obtained which is treated with sulphuric acid, a sulphoichthyolate being formed which when neutralised with ammonia constitutes the genuine product known as ichthyol. It is difficult to say precisely to what its undoubtedly therapeutic properties are due, but it is probable that the peculiar combinations of sulphur in it afford a clue. There is sulphur present in the so-called sulphidic form—that is, non-oxidised sulphur probably combined with hydrocarbons; there is also sulphur present as sulphate and sulphonate. It is an interesting fact that in spite of the oily nature of the preparation it is miscible with water and to some extent with alcohol. According to a partial analysis which we have recently made, the total amount of sulphur present is 10·30 per cent., of which 8·92 is organically combined and 1·38 occurs in association with ammonia. The total ammonia amounted to 3·23 per cent. Rather more than half of the constituents are non-volatile at 100° C., 43·74 per cent. being due to water. Ichthyol has gained prominence in the treatment of skin affections given internally, but its most valuable applications are externally, as in eczema, psoriasis, and erysipelas, and as an antiseptic in gynæcological practice. It appears also to serve usefully as a gastro-intestinal antiseptic.

BYNO-LECITHIN.

(ALLEN AND HANBURYS, LIMITED, BETHNAL GREEN, LONDON, E.)

Byno-lecithin is an agreeable and satisfactory combination of active malt extract with the organic glycerophosphate, lecithin. The digestive activity of the preparation was well shown in our experiments, while it was not difficult to extract lecithin in a state of purity. This phosphatide occurs evidently in association with oils, since ether withdrew oil from the preparation. The quantity of lecithin present is 4 grains per fluid ounce, our analysis confirming this statement, in addition to which the phosphoric acid equivalent was found to be in accordance with the requirements. We regard the preparation as a satisfactory way of exhibiting lecithin, which on account of its special characters gives good results in disorders where assimilative functions require restoration, as well as in the treatment of some forms of nervous disease.

FRUCTOLAX.

(SAVORY AND MOORE, LIMITED, 143, NEW BOND-STREET, LONDON, W.)

Fructolax is an elegant presentation of a pure hydrocarbon for internal administration. It has an attractive appearance which is not unlike that of red currant jelly, while its flavour is that of a delicate fruit conserve. Our analysis showed the presence of nearly 80 per cent. of hydrocarbon, which at ordinary temperatures is soft in consistence. It is now admitted that the administration of a hydrocarbon gives in

many cases marked beneficial results, referable chiefly to a lubricating action in the bowel, and Fructolax provides a very agreeable method of adopting this treatment. The taste is good and the laxative and lenitive effects are satisfactory.

IROCOSE.

(THE BAYER COMPANY, LIMITED, 19, ST. DUNSTAN'S HILL, LONDON, E.C.)

Irocose is a dark brown syrupy fluid containing proteoses and iron in an organic form. The addition of bromine water turns the preparation solid from coagulation of the proteoses. There are no objectionable preservatives present. We obtained the following results on analysis: Moisture, 41·53 per cent.; total solid matters, 58·47 per cent.; and mineral matter, 1·28 per cent. The proteoses amounted to 15·86 per cent., and an estimation of iron gave the figure of 0·285 per cent. in terms of the metal. Practically one-fifth of the mineral matter contains iron, which, as we found, exists in the original preparation in the organic form. The balance of total solids is accounted for by sugar used probably in the form of syrup. The therapeutic advantages of the preparation are that it is both nutrient and hæmatinic, each constituent being presented in an assimilable form.

VARIOUS CYDERS.

(W. GAYMER AND SON, ATTLEBOROUGH, NORFOLK.)

The following analyses are interesting as showing the variations that exist in the composition of different qualities of cyder manufactured in the Eastern county. The sample labelled two diamonds gave the following results on analysis: Alcohol, by volume 5·39 per cent.; extractives, 6·28 per cent.; sugar, 5·88 per cent.; mineral matter, 0·21 per cent.; fixed acidity reckoned as malic acid, 0·14 per cent.; and volatile acidity reckoned as acetic acid, 0·28 per cent. The sample marked O.N.S. gave the following results: Alcohol, by volume 7·32 per cent.; extractives, 6·82 per cent.; sugar, 5·37 per cent.; mineral matter, 0·30 per cent.; fixed acidity reckoned as malic acid, 0·32 per cent.; and volatile acidity reckoned as acetic acid, 0·33 per cent. The sample marked one diamond gave the following results: Alcohol, by volume 5·78 per cent.; extractives, 7·78 per cent.; sugar, 6·50 per cent.; mineral matter, 0·21 per cent.; fixed acidity reckoned as malic acid, 0·23 per cent.; and volatile acidity reckoned as acetic acid, 0·30 per cent. The sample marked V.D. gave the following results: Alcohol, by volume 7·32 per cent.; extractives, 6·91 per cent.; sugar, 5·55 per cent.; mineral matter, 0·26 per cent.; fixed acidity reckoned as malic acid, 0·26 per cent.; and volatile acidity reckoned as acetic acid, 0·31 per cent. The sample marked N gave the following results: Alcohol, by volume 7·74 per cent.; extractives, 6·10 per cent.; sugar, 4·54 per cent.; mineral matter, 0·20 per cent.; fixed acidity reckoned as malic acid, 0·30 per cent.; volatile acidity reckoned as acetic acid, 0·30 per cent. The sample labeled Still cyder (Hock type) gave the following results: Alcohol, by volume 7·74 per cent.; extractives, 5·16 per cent; sugar, 3·84 per cent.; mineral matter, 0·26 per cent.; fixed acidity reckoned as malic acid, 0·26 per cent.; and volatile acidity reckoned as acetic acid, 0·24 per cent. It will be seen that as regards sugar the lowest amount occurred in the still specimen, which is correctly described as possessing hock character. This is an interesting departure in cyder production, and the result is an agreeable and wholesome beverage. It blends particularly well with aerated water. It will be further seen that the variations in sugar in the effervescing specimens are not very great, while the malic acid is fairly constant in quantity. The absence of excessive acidity recorded as acetic acid is some evidence of the soundness of the products. The figures in regard to mineral matter practically record the amount of alkaline salts which the beverage would yield on metabolism. It will be remembered that cyder has a reputation for being suitable for gouty patients, and it is possible that the alkaline salts which are available may be of assistance. It may also be remembered that the sugar of the apple is more readily metabolised than cane sugar. The preparations were all sound and free from antiseptics, and possessed a delicate and agreeable "appley" flavour.

(1) "TABLOID" HYPODERMIC MORPHINE HYPOPHOSPHITE (2) "TABLOID" DIGITALIN CRYSTALLINE.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

1. The fact that morphine hypophosphite is remarkably soluble in water enables a concentrated solution to be used if desired in hypodermic medications. That is practically the reason for its introduction in tabloid form, while further, the salt is stable and neutral in reaction. It is said to answer well and promptly without causing pain at the seat of injection. Each tabloid contains ¼ grain of the salt. 2. In the tabloid digitalin the glucoside is in its most active form, and owing to its potency its administration should be carefully watched, but the definite crystalline substance enables an exact regulation of the quantity of active agent administered to be made. Each tabloid contains 1/250th grain of crystalline digitalin.

New Inventions.

DISSECTING AND SURGICAL NON-CUTTING FORCEPS WITH IMPROVED HANDLE.

THE forceps here shown contain two new principles—the special non-cutting tips and a non-tiring sure grip handle.

This style of forceps tip or end has been modelled after the human fingers. There are no sharp edges that can cut or damage a ligature held by them or on which a knot is tied. They are used to hold delicate structures, such as vessels, nerves, tendons, and fine ligature material, and soft tissues generally. The length of the forceps is such that deep work, as in the pelvis, can be done easily and yet is not large enough to be clumsy. It is the general experience of operators that ligatures not infrequently cut through after they have been tied tightly down on forceps with serrated edges. Either the ligature is allowed to slip, by the withdrawal of the forceps too soon to prevent the above accident occurring, or the operator takes the risk. I have tried a large number of knots that have been tied tightly down against ordinary tissue forceps and in each case the ligature has been damaged, most of all in soft catgut. The instrument is of special use in orthopædic work such as tendon transplantation, blunt dissection, keeping a running suture tight while the needle is taking a fresh stitch, and in delicate and soft structures in general. The handle, which is a non-slipping and non-tiring grip, is a combination of the lateral corrugations and a longitudinal central groove. The curved depression allows the pulp of the fingers to fit in it and affords a broader bearing surface which is much less fatiguing than any other type. This type of handle can be applied to ordinary tissue forceps and others.

The forceps are made by Messrs. Allen and Hanburys, 48, Wigmore-street, London, W.

Toronto, Canada. GORDON G. COPELAND, B.A., M.B.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 1, 1913.

The Case of the Malingerer.

WE publish this week a timely and interesting lecture by Sir JOHN COLLIE on Malingering in Accident and Disease, delivered recently at the Medical Graduates' College and Polyclinic. The subject is not a pleasant one. It brings us into contact with a very dark side of human nature, one which the medical man approaches reluctantly lest it should imperil that sympathy which the consideration of genuine pain and physical disability arouses in him. A melancholy and discouraging aspect of malingering is opened up when we recognise that it has increased and is increasing by reason of recent legislation of a benevolent character, planned by its promoters with a view to alleviating the sufferings of the humbler classes of society when the victims of disease or accident. Nevertheless, whether attractive or not as a subject for study, the practices of conscious deceivers and of unconscious exaggerators, and the methods by which we may cope with them, will become in an increasing degree matters with which a large section of the medical profession must render itself familiar. The examples with which Sir JOHN COLLIE illustrates his lecture are gathered from his observation and experience of several classes of case in which it is to the interest of the person examined by a medical man to lead astray the diagnostician. In addition to instances observed in connexion with workmen's compensation, he shows that among working men, who by provident insurance when in health render themselves entitled to benefits from their societies when incapacitated by sickness, the temptation to enjoy a rest at the common expense produces malingerers. Now under conditions existing hitherto, members of societies which provide against sickness have been voluntary insurers, drawn for the most part from the more prudent and respectable sections of the working classes, interested in maintaining the integrity and prosperity of their societies, and not destitute of a certain *esprit de corps* and independent pride. The National Insurance Act adds to these genuinely provident an enormous body of compulsorily insured, a substantial part of whose premiums is not paid by themselves, and these now find themselves, whether they desire it or not, entitled for the first time to medical attendance and medicine when ill, and enjoying the right to pecuniary benefit or compensation for lost wages. The payments to them in this latter respect may not satisfactorily replace their usual weekly earnings, but will substantially diminish the loss otherwise occasioned by a period of idleness. The newly insured, if not members of any society before the Act came into force, will not have the inducement for malingering referred to by Sir JOHN COLLIE, which consists in the fact that a working man may contrive to enjoy a larger income when on sick pay than he earns when in full work; but nevertheless many of them will be earners of small wages to whom the sick pay provided by the Act will not appear despicable, while a course of medical attendance and medicine may have for them an element of enjoyable novelty. Medical men have already found that persons compulsorily taxed are likely to feel themselves aggrieved if they cannot obtain "something for their money," and may not be over-scrupulous as to getting it. In any event, it will be to the interest of medical practitioners upon the panels not to be deceived by their patients, if only because they will have to sign many certificates, and may expose themselves to criticism by giving or refusing these documents without reasonable certainty that they are right in so doing.

To a certain extent it must always be distasteful to a medical man to feel that he is expected to exercise vigilance with regard to his patient in order to secure himself against being victimised by deceit, fraudulent and deliberate. The detection of malingering, the term naturally used in such a connexion, suggests the action of the detective intervening in relations which should be confidential, cordial, and marked by candour on both sides. At the same time the unmasking of the malingerer forms a valuable aid in promoting that education in health matters which is one of the most important of the possible results of National Insurance. If it were to become generally recognised, even by those dishonestly inclined, that to attempt to deceive a medical man by simulation or exaggeration of symptoms was a hopeless task, the result would be mutual confidence and the following of advice which would only be sought when honestly required. Moreover, the tendency of such conditions, if they could be established, would be to encourage and inculcate principles of integrity in other matters. The object of the malingerer, it must be remembered, is not merely to deceive a member of the medical profession, to whom he has to tell a story as to his supposed bodily ailments. His aim is to extract money which is not his due from an employer or some other person whom by some curious mental process of self-deception he regards as fair game. That is to say, there are persons who with an easy conscience would deceive and rob an employer, particularly if that employer happened to be some such impersonal entity as a railway or insurance company, but who in their ordinary relations with their fellow men would be fairly, if not strictly, honest. But a fraud on a medical practitioner, successfully carried out by the malingerer, must be morally corrupting, and the medical man who can detect him and check his attempt at the outset will save him from moral downfall and so do good service not only to the man and to his employers, but to the community. Perhaps some day the moral sense of the working-classes generally may be brought to condemn the malingerer in such unmistakable terms that he will practically cease to exist, and so desirable a consummation is likely to be aided by diminishing the number of instances in which malingering leads to money.

As a practical and uncompromising exponent of the art of unmasking the malingerer Sir JOHN COLLIE has achieved

marked success. He has been made the object of personal attack by advocates who have desired to establish on behalf of their clients claims to which his evidence has been opposed, and those attacks have always failed. The hints that his lecture affords are practical in character, commencing with his statement that success in the tactics which he recommends is not always so much a question of scientific knowledge as of independence, fearlessness, and general alertness. These, however, are qualities not only of use in the branch of medical examination with which we are dealing; they constitute a valuable portion of the equipment of every man who aspires to success in the medical profession. To some extent all our readers are prepared with the proper weapons against the malingerer; it is our uncongenial duty to warn them that it may be of particular value, now that the National Insurance Act is in working, to keep those weapons bright.

Leisurely Tactics at Tuticorin.

WE published in a recent issue of THE LANCET a letter from a correspondent who is in a position to learn, from his association with the town and district of Tuticorin, of the perilous position in which the locality is placed owing to its lamentable provision, or want of provision, of water, either for drinking or for bathing. The British Empire, at its centre, does not know much about the life and local government in its Imperial dependencies, and this position, when we look into it, is seen to have its creditable side as well as its regrettable. For if, on the one hand, the ignorance appears to imply a certain callousness on the part of those at home towards the nations and languages under our rule, on the other it implies two things of great significance: the first of these is the glorious fact that the countries over which we have sway are so numerous that there must ever be occurring in places under our flag situations of the greatest difficulty and importance to those who live among them, but which cannot receive much attention from us at home—we, too, have our difficulties in a life that becomes daily more complicated; the second fact is that our local administration in all parts of the Empire is so honestly run in face of difficulties by competent staffs in coöperation with residents of whose loyalty there is no suspicion, that there is necessarily a tendency to believe that in all difficulties the best is being done, or will be done shortly. The tendency of ill to disappear and of the inferior to be replaced by the superior is very strong in our conduct of affairs, and as a nation we are proud to know it, and are perhaps a little too inclined to rest secure that in any disagreeable position that tendency will assert itself. Looked at in this light the letter from "F.R.C.S." which was published in our issue of Jan. 18th may be regarded at its wrong value. It tells a story of the bad water-supply in a south Indian port, and may leave the impression upon those who pride themselves upon always observing the true proportions of what they hear, that the matter, doubtless very distressing to those concerned, will shortly be adjusted. Because this impression would be false we return to the subject. From information that has recently come to our hands it appears that the water-supply of Tuticorin, or rather its absence, is an evil of first-class dimensions and not a little local trouble, and that the evil is also of prolonged history, showing no disposition to get itself remedied. Indeed, as long as it exists a deep reproach lies upon those responsible for it.

Tuticorin is not an obscure hamlet; British material interests in the place are large. It is a port in the south of India, where it ranks next in importance to Madras. On the sea coast, it is the place of embarkation for the labour supply of Ceylon; it has a population of nearly 40,000; it maintains important cotton ginning and spinning mills, and its trade, we understand, amounts to close on £6,000,000 per annum. The present water-supply of Tuticorin is tapped from the Tambirabani river, the reservoir tanks being some five miles from the city. From these tanks the water runs by a concrete passage into another tank about a mile out of the town, and this in its turn supplies the wells from which the natives obtain water. Both tanks are open so that the supply can be contaminated, while in times of drought the quantity is totally inadequate for the needs of the population, and in times of rain it is affected by all the numerous forms of animal and vegetable filth which are washed into it. After the rains the supply is adequate in quantity for some two months, though unnecessarily rich in the fauna and flora of Southern India. At the expiration of two months the supply becomes very limited and may entirely cease, so that for the greater part of the year discomfort is entailed, and occasionally intense suffering. The water-supply for the white population has then to be brought from Ceylon. That a place of the size and importance of Tuticorin should be temporarily, or as the result of some accident at the intake or in the conduit, in such stress for water would be sad and would appear to demand instant remedy. That this should be the normal condition of Tuticorin, and that the condition should have existed, and have been protested against, for nearly half a century, is a scandal. We have had sent to us an extract from the *Madras Times* of Sept. 27th, 1866, in which there is printed a newsletter from Tuticorin dated six days previously. The writer of the letter, after saying pleasant things generally about the weather and the environment, adds: "If Government would only do its duty and supply us with good water—much could very easily be brought in from reservoirs 15 miles out—we should have very little to complain of. While on this subject—water—I may tell you that I write feelingly, for the scarcity of it has dealt me a heavy blow." The blow in question was the death from drought of three cocoanut trees growing in the garden of the writer, the only three at that time in the place, and there is nothing in the letter indicating the serious dangers of the bad water-supply which have since manifested themselves with the growth of the community. But we quote the words above for the reason which led to their being sent to THE LANCET—viz., to show that the condition, which is now rousing to exasperation the inhabitants of Tuticorin, has been a subject of public notoriety since 1866. This, we think, is a proof of the leisurely tactics of the authorities concerned.

It does not need any words from us addressed to a medical audience to accentuate the evils of the situation brought to

their notice in his brief communication by "F.R.C.S.," but it is impossible not to feel that we have here a situation in which the authorities at home might be expected to interfere if the local administration of Tuticorin is unable to set its house in order; and such would appear to be the case if only from the long history of the evil. For some reason or other the residents of Tuticorin do not appear to be able to make the proper impression upon the representatives of the Government with whom they should normally be in touch, and the municipal council of the city appears to be supine or powerless. At the end of last year, when heavy rains were falling, the masonry of the conduit conveying the drinking water to Tuticorin was washed away for about two miles, and the danger in which the city was thus placed attracted for the time real attention. It was hoped that now, at any rate, the Government would depute a special officer to make a first hand investigation, and by this time this may have been done. If delay still occurs, we are moved to ask what the delay is for? Is it to be supposed that it requires the advent of cholera to arouse those concerned to a proper sense of their responsibility? Of course it is not, but we are left to wonder what stimulus short of a devastating epidemic is required, for we are convinced that an appeal for present help in the time of trouble would not have been addressed from Tuticorin to this country unless the capable business men in that city, from whom it has emanated, had begun to despair of obtaining relief in any other way. The natural interpretation of the procrastination in this matter is that the authorities are following the happy-go-lucky policy of trusting that from year to year things will not be so very bad; that from year to year they will, at any rate, grow no worse; and that sooner or later something will be done. A year of marked drought may make the appeals for assistance more urgent; but if this bad season is followed by a year when the water-supply is better, the anxiety that had been aroused is abated, and the official action promised under stress of circumstances does not take place upon the relief of those circumstances. If this is the explanation of the reason why Tuticorin has no water, the medical man and the sanitarian, and we should think all of any intelligence in public affairs, will alike find it no explanation worth putting forward.

The Pathogenicity and Virulence of Bacteria.

SINCE the inauguration of the study of bacteria as causative agents of disease in man and the lower animals our original conceptions of pathogenicity and virulence have undergone radical changes. To BAIL we owe a useful classification of bacteria with reference to pathogenicity and virulence. He distinguishes three classes of bacteria—the saprophytes, the half-parasites, and the whole-parasites (ganzparasiten). When introduced, even in enormous numbers, into the animal body the saprophytes do not lead to specific disease; they are non-pathogenic. In the case of the half-parasites the power to infect depends upon their numbers. In certain numbers such bacteria fail to produce disease in a susceptible animal; in greater numbers they produce specific disease; and in greater numbers still they lead to the death of the animal. Whole-parasites are so virulent for susceptible animals that if one single bacterium is introduced into the body death inevitably follows. It must, of course, be realised that a given bacterium may be a whole-parasite for one kind of animal, a half-parasite for another, and a saprophyte for yet another. A considerable amount of experimental study has been devoted to this question of recent years, and many interesting facts have been brought to light.

Last week we published a preliminary communication on the Pathogenicity and Virulence of Bacteria from the Bacteriological Laboratory of University College Hospital, by Dr. F. H. THIELE and Dr. DENNIS EMBLETON. The paper contains much that especially concerns the experimental bacteriologist, and also many ideas which are of interest to the practitioner of medicine who is responsible for the clinical study of infective diseases. The authors conclude from a number of experiments that the pathogenicity of bacteria depends on the presence in the susceptible animal of a ferment capable of producing lysis of the proteids of the bacterial body; the mechanism of the cellular defences of the body is hindered by the setting free of anti-phagocytic substances (aggressins in the sense of BAIL), with the result that the bacteria multiply to numbers sufficient to cause disease or even death. Thus, if the bacterium is not acted upon by ferments, it remains innocuous (saprophytes). If the ferment action is able to split off from the bacterium toxic substances sufficient in amount to inhibit phagocytosis, the animal becomes infected (parasites). Further, the authors believe that if the ferment action is sufficiently active and rapid the changes in the bacterial protoplasm may advance to such an extent that even the toxic products of degeneration are destroyed; in this event no aggressive substances are liberated, and phagocytosis can proceed unhindered. The destruction of bacteria is facilitated by the leucocytosis, a cellular reaction so often associated with bacterial diseases, and recovery from the infection follows. The authors were actually able to show that by previously sensitising animals, in the anaphylactic, sense they were able so to alter the amount of specific ferment in the animal body that bacteria, saprophytic for a particular species of animal, became parasitic and led to the development of a specific disease or even of a fatal septicæmia. With regard to virulence, the authors believe that it depends upon the power of the bacterium to exude around itself a zone of its cytoplasm which remains in position and acts as a protective shield. This shield, in some cases a visible capsule, protects the bacterium against the action of specific ferments, and also resists phagocytosis by virtue of its aggressive property. They hold, then, that pathogenicity is due to the virulence of the bacterium and the relative activity of the ferment to the bacterium. Immunity is due to ferment action and phagocytosis—i.e., it is cellulo-humoral.

The paper contains much that is highly suggestive, and we anticipate with pleasure the appearance of further details of the authors' experiments. Dr. E. C. HORT and Dr. W. J. PENFOLD, whose study of the problems of immunity in experimental fever is alluded to by Dr. THIELE and Dr. EMBLETON, write a letter to our columns this week, to which

is appended full references to their own work on the subject as well as to the work of many other observers. The difficulties connected with the study of anaphylactic fever are well known, and we do not attempt here to make allusion to them, confining ourselves to commenting upon infection experiments in which not only post-mortem lesions but demonstrable capsule formation can be adduced in support of conclusions. Accurate post-mortem examinations always command attention, whilst the significance of capsule formation becomes evident from the recent careful work of PREISZ, GRUBER, and FUTAKI.

Annotations.

"Ne quid nimis."

MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS.

"IT is clear, however, ... that a primary step in the direction of rendering medical service adequate should be to place a doctor in such a position of financial competence and professional security as would enable him to carry out the highly responsible duties of his post with the fullest efficiency, zeal, and contentment." To find a committee appointed by Government expressing such an opinion as that which we have quoted is no less surprising than it is gratifying, yet the words in question are found upon p. 16 of Vol. I. of the Report of the Highlands and Islands Medical Service Committee, appointed July 11th, 1912, and issued as a Blue-book on Dec. 24th of the same year. Vol. I. contains the report; Vol. II. the minutes of evidence and the index. The matter of the report is, if saddening reading, at the same time of extraordinary interest; the patience and fortitude with which the greater part of the population in question bear sickness and death is only exceeded by the gallant struggles under almost overwhelming difficulties which are time after time exhibited by the medical man in endeavouring to bring aid to the sick. The physical characters of the district are such as to make the provision of medical attendance a matter of exceeding difficulty. To quote the report: "The country is rugged, roadless, and mountainous and where not composed of islands is very largely peninsular on the seaboard, and inland is broken up by lakes and rivers. The weather conditions, too, and particularly in the winter time, add enormously to the difficulties of travel."[1] It appears from the report that by far the greater number of medical practitioners in the districts under review are parish medical officers appointed by the parish council nominally to attend to the registered sick poor, but as a matter of fact these officers are appointed to attend to the whole population of the parish, their fees for such as are not paupers being often fixed by the parish council at a much lower rate than ordinary charges. The result of medical men working under such unfavourable conditions is that there is a constant change of doctors; in one parish, for instance, there were "ten doctors and as many *locum tenentes* in twenty-two years." The general recommendation of the committee is that the existing public medical services should be consolidated, and should work under a central authority together with a special local authority. Further, the committee "express their opinion in a general way that for public and private medical service (in single practice areas) a minimum income of £300 per annum, with travelling allowance, should be secured to every medical practitioner recognised by the central authority." We are thus apparently in view of a State Medical Service for, at all events, a portion of the kingdom. The report of the committee shows that its members recognise the necessity for a contented medical service; it remains to be seen whether the Government will look at the matter in the same light.

[1] See THE LANCET, Jan. 25th, 1913, p. 278.

SURGEONS ON ANÆSTHESIA: THE USE OF NITROUS OXIDE AND OXYGEN.

ANÆSTHETISTS see so much of operative procedures that they often become keen and competent surgical critics, though for obvious reasons they seldom voice their opinions. Surgeons, in their turn, are largely dependent on satisfactory anæsthesia for comfort and even for success in operating, and thus tend to be good judges of the administration. Each class is prone to belittle the critical faculty of the other; and it would be difficult to say whether surgeons resent suggestions from anæsthetists in respect of their operations more than do anæsthetists from surgeons about the anæsthetic. At the twenty-fifth annual meeting of the American Association of Obstetricians and Gynæcologists[1] several surgeons indulged in plain speaking about various methods of anæsthetisation which are just now in favour with American anæsthetists. The whole discussion is interesting in view of the present divergence between British and Transatlantic practice in this specialty, although apparently but one anæsthetist took part in it. In the United States several of the leading authorities upon anæsthesia have during the last few years employed nitrous oxide and oxygen very extensively in major surgery, and have published their conviction that this combination is superior to all others in safety and range of application. Preceded by morphine, scopolamine, and similar narcotics, nitrous oxide and oxygen are administered for the most extensive laparotomies as well as for operations demanding a less profound relaxation of muscles. In averting shock, toxic symptoms, asphyxial complications, and troublesome after-effects of all kinds, the method is said to be far superior to any other. In this country, on the other hand, where the possibilities of nitrous oxide and oxygen were originally investigated by Sir Frederic Hewitt many years ago, the general sentiment is that the method has serious limitations, especially imperfect relaxation, difficult and complicated technique, and expense. According to Dr. Skeel, who read a paper at the meeting in question, and several of his surgical colleagues, hesitation in accepting the glowing accounts of American administrators is distinctly to be justified. Dr. Skeel asserts that "for the majority of abdominal operations nitrous oxide is neither the most comfortable nor the safest" anæsthetic. He holds that in thus producing narcosis sufficiently profound for major operations, as opposed to dental extractions, there is a very distinct danger of asphyxiation, even in the most expert hands. Once the deepest possible anæsthesia has been attained the danger disappears, but is succeeded by another. Either the oxygen in the mixture, says Dr. Skeel, or the carbon dioxide stimulation keeps the patient in such apparently good condition that there is sometimes a temptation to prolong unduly an operation which might have been hastened, with the result that dangerous shock comes on immediately after the anæsthetic is withdrawn. The exactly opposite danger of failing to survey thoroughly the entire field of operation on account of troublesome rigidity is also mentioned as a drawback, and Dr. Skeel says that unjustifiable force and manipulation are often required, "since abdominal rigidity and protruding gut are always in

[1] American Journal of Obstetrics and Gynæcology, January, 1913, p. 102.

evidence." Nevertheless, he believes strongly in the method for vaginal operations and for those already suffering from bronchitis, pneumonia, or nephritis. Subsequent speakers laid stress upon the frequency of fatalities under nitrous oxide and oxygen, which would seem to be far more numerous than the published statistics indicate. Whether the American surgeons convince their anæsthetist colleagues or not their discussion will probably confirm British operators and anæsthetists in their preference for ether when a laparotomy has to be performed.

A BLIND LIGHTNING CALCULATOR.

Dr. Desruelles, of the asylum of Armentières, published last summer in *L'Encéphale* a very interesting and valuable description of a new case where phenomenal ability in arithmetical calculation is associated with general mental inferiority, if not actual insanity, and where, further, there is a curious complication in the fact that the patient has been blind from birth, and therefore can have no visual memory. The paper has been brought to our attention by a valued correspondent. Fleury is a young man of 18, who suffered from ophthalmia neonatorum and is completely blind. He has never been teachable in any way, has always proved refractory and difficult to manage, and has passed from an institution for the blind to an asylum. The only thing successfully taught him has been the Braille system, but his capacity for reading thereby is by no means well developed. On the other hand, he has from an early age shown himself exceedingly apt in figures, and partly by persevering with the Braille method, partly by devising certain mental methods for himself, he has reached a stage of extraordinary facility in performing elaborate calculations, the extent of which is limited only by his difficulty in remembering any set of figures beyond six. Psychologically the case is of very great value, for it must be remembered that Fleury has no visual memories at all, and on questioning him he denies that he uses his auditory memory to any extent. It is clear that his tactile memories are so remarkably developed that by them alone, coupled with certain other processes to be mentioned below, he is able to perform mental feats of an astonishing kind. When he calculates he uses his fingers constantly as though he were feeling the familiar raised Braille figures with them, and while he mutters to himself as he does this, it is not figures that he is repeating, but such fragments as "that makes ....," "then ....," "added to ....," &c. As an instance of his tactile sense capabilities it may be mentioned that Dr. Desruelles vouches for the fact of his avoiding all sorts of objects in his way, even though he be in a place where he has never been before. Fleury was taken to a corridor, to him entirely unfamiliar, where on the right was a closed door, in front an open door, and to the left a half closed door. In perfect silence Fleury, as it were, "felt" round him, then said that on the right was a wall, in front a room, and on the left an open window. This astonishing "sense" he localises on the skin of his cheeks, but he has great difficulty in explaining exactly what it is he feels or is conscious of. All of Fleury's calculations are mental; he does not repeat figures with his lips. Some examples of his faculty may now be given. He multiplied 625 by 825 in 4 seconds. He gave the cube root of 1927 in 9 seconds. Given a day of the week in 1912, he calculated May 22nd, 1908, as a Friday, in 5 seconds. Asked how many seconds in 39 years, 3 months, and 12 hours, he gave the correct answer, 1,238,587,200, in 1 minute 15 seconds. Perhaps the most interesting part of the article is concerned with the methods employed by Fleury. He multiplied 287 by 341 correctly in 10 seconds. In this instance he first multiplied 200 by 300 = 60,000, then 300 by 87 = 26,100. He then added 26,100 to 60,000 = 86,100; then 41 by 200 = 8200; 8200 plus 86,100 = 94,300; 41 by 87 = 3567; 94,300 plus 3567 = 97,867. Thus, there were seven separate operations, four multiplications, and three additions, in ten seconds. It is apparent that defect of visual memory must complicate the methods employed by Fleury, and the rapidity of the result is thus the more remarkable. By studying the calendar he has evolved, unaided, curious and interesting laws which make his finding the day of the week for a given date less wonderful than appears at first sight. Asked the day for May 15th, 1911, he spoke aloud as follows: "January 1st, 1911, was a Sunday [he knows this by heart], January 2nd is a Monday, then May 1st is a Monday, for the first day of May is always on the same day as the second day of January. In leap year May 1st is the same as the 3rd of January. May 15th, 1911, is a Monday." Again, asked July 29th, 1908, he replied as follows: "January 1st was a Wednesday. I know it by heart. July 1st is always the same as January 7th, except in leap year, when it is the same as January 1st; 1908 is a leap year, and July 29th is always the same as July 1st—i.e., as January 1st. July 29th, 1911, was a Wednesday." It will be seen that Fleury can give the answer practically instantaneously if he wished in such a case. There is much more of interest to the psychologist and physician in this paper, which appeared in June last year, and contains besides information regarding other well-known lightning calculators.

SAINT ANTHONY'S FIRE.

IN the course of a paper by the late Dr. Robert Fletcher, which appears in the December number of the *Bristol Medico-Chirurgical Journal* on the subject of diseases associated with the names of different saints, are found some interesting observations on the nature of the disorder known as "St. Anthony's fire." This has been variously considered to represent malignant leprosy, epidemic syphilis, virulent scarlet fever, gangrenous erysipelas, scurvy, herpes, and, lastly, ergotism. The symptoms described by mediæval writers were severe burning pains in the extremities, followed by slowly developing gangrene of these parts, which became black and gradually separated from the body. It occurred in epidemics, but was not apparently catching, and was distinguished by contemporary writers from plague, although subsequent historians seem to have confounded the two under the common name of "feu de St. Antoine." The first well recognised epidemic occurred in the year 945 A.D., a fact which contradicts the view that the malady was first introduced by returning crusaders, and epidemics were associated with years of famine and failure of crops. The clinical picture and this connexion together seem to identify the disease with chronic ergotism due to the use of diseased rye. It is not very clear how this affection became associated with the name of St. Anthony, who was born in Egypt in the year 251 A.D., and was thus contemporary with St. Athanasius, who wrote his life. His remains were removed from Constantinople to Dauphiné in the year 1070 and were regarded as endowed with the power of healing diseases. A gentleman, whose son had been healed of the *feu sacré*, founded a hospital in honour of the saint, and others were subsequently built elsewhere, the Pope founding an order of Antonist monks to manage them, and possibly the special association with the "fire" was due to the nature of the affliction the cure of which was the occasion of the first foundation. In portraits St. Anthony is represented as accompanied by a pig, but the legend embodied in this companionship is not preserved. He also carries in his hand a T-shaped cross, the "tau" cross or *crux commissa*, a symbol which appears in other forms of worship, as in that of Buddha and of the Egyptian god Canopus, as well as in the questionable

mysteries of the Phœnician Thammuz, the Greek Adonis As this mythical youth was supposed to have been killed by a boar, it seems possible that the pig and the tau cross of St. Anthony were both originally taken from this form of worship and attributed to the saint, who is thus condemned to have his portraits associated with an unclean beast and a phallic emblem.

FURTHER TRIALS OF NASTIN IN LEPROSY.

THE results of experiments with nastin in the treatment of leprosy have not up to the present been very encouraging. In THE LANCET of March 30th, 1912, we gave a summary of certain trials that had been made of this remedy, more particularly in the Mahaica Leper Asylum in British Guiana. Some further evidence on the subject has now reached us from India, where experiments with nastin have been made in two leper asylums—namely, at Gobra, under the direction of Major J. W. D. Megaw, I.M.S., officiating professor of pathology, Calcutta Medical College; and at Bhagulpur, under Captain F. A. F. Barnardo, I.M.S., officiating civil surgeon. The reports of these officers are accompanied with notes by Colonel G. F. A. Harris, I.M.S., inspector-general of civil hospitals, Bengal. Previous trials of this method of treatment had been made in Bengal by Major L. Rogers, I.M.S., who described the result as *nil*, and by Major S. Anderson, who thought that the method of treatment constituted a real advance upon other ways of dealing with leprosy. In the present instances Major Megaw treated 14 patients with nastin, and Captain Barnardo treated 6. Major Megaw points out that lepers put upon this treatment generally express themselves as feeling better at first, but that later the majority become disappointed and cease to have any faith in the remedy. The influence of suggestion is undoubtedly a factor in producing these early improvements, for hope stimulates the appetite and general health. This improvement possibly reacts upon the leprous lesions, but the same effects would probably occur under any form of treatment in which the patient had a strong belief that it would do him good. Major Megaw goes on to say that in no case has nastin produced a cure, and not even a greater improvement than may be seen in other cases apart from any specific treatment. Moreover, nastin is a costly remedy and a painful one, though it appears to be safe and practically free from ill-effects. Captain Barnardo was unable to continue his experiments longer than four months, and therefore he was not able to give a very definite opinion on the merits or demerits of the treatment. Nevertheless, he formed the opinion that more prolonged trials would be followed by certain benefit. Colonel Harris in his notes states that he does not think that the results obtained in the small number of cases treated by Captain Barnardo can be taken as very strong evidence either in favour of nastin or against it, and in view of Major Megaw's experience, and considering the previous tests made of the remedy, he is not disposed to recommend that any further trials be made of it. The promise which was held out by the earlier use of nastin has not, in Colonel Harris's opinion, been confirmed by later experiments, though it is not denied that in some cases nastin injections unquestionably are followed by marked improvement. Much has been hoped for from the use of a vaccine treatment of leprosy, and in India and elsewhere experiments in this direction are being made. In this connexion we draw attention to some observations on the subject of this form of treatment made in a paper read at Cape Town last October by Dr. H. Bayon, research bacteriologist to the Government of the Union of South Africa, on the Present Position of Leprosy Research. Dr. Bayon says that the injection of a filtered diluted cultural extract, made from the strain of leprosy bacilli isolated by Kedrowsky, had a markedly beneficial effect in one case of maculo-anæsthetic leprosy where prolonged treatment with nastin had previously failed to produce any improvement. He adds that further experiments are now being carried out on a larger scale. No reliable results, he says, are, however, to be expected without careful dosage and protracted treatment; trustworthy records can only be obtained after sufficiently prolonged observation. Dr. Bayon is of opinion that a "vaccine" or "killed culture" treatment is not to be recommended in leprosy, because the bacilli remain absolutely quiescent in the tissues, "and the *conditio sine qua non* of immunisation—the production of an antibody—does not follow in course."

A MOVEMENT TOWARDS MEDICAL REFORM IN SPAIN.

A SPANISH correspondent writes:—A great meeting of medical students has lately been held at the Theatre Barbieri in Madrid, in support of the demand that the salaries of the parish doctors throughout Spain should be paid by the Central Government. Hitherto these functionaries had to depend for their salaries on the goodwill—or even ability to pay—of the municipal authorities by whom they were appointed, with the result that many doctors have been kept without their salaries for years. Strange as it may appear, they have no legal redress against the present authorities. The municipal schoolmasters until quite recently were in the same predicament and equally had no redress. The president of the students' association, Señor Alminana, gave an account of the investigations made by the committee and the conclusions arrived at. After a long discussion the following resolutions were passed:—

1. To demand the immediate payment of the district medical officers by the Government [for the purpose of carrying out this project the help of the students on strike is to be sought].
2. To form an extra-Parliamentary Commission which would bring before the Government a scheme of reforms.
3. To improve the position of the medical profession.
4. To encourage interest in reciprocity in medical qualifications with foreign countries.

THE THERAPEUTIC VALUE OF BALSAM OF PERU.

IN *Merck's Report* for December Mr. Philemon E. Hommell calls attention to the wider use that is now being made of balsam of Peru in the treatment of disease. It possesses expectorant, stimulant, stomachic, vulnerary, protective, antiseptic, and disinfectant properties. It is eliminated by the skin, kidneys, and bronchial mucous membranes, stimulating their secretions. A conspicuous use for balsam of Peru is that of a stimulant, protective dressing for foul indolent ulcers, promoting the formation of a cicatrix. It has a marked healing and antiseptic effect in tuberculous affections of the bone and skin, and, in combination with sulphur, is of value in obstinate forms of eczema. It is a most satisfactory application in scabies, and it has been employed in the treatment of chilblains, bed-sores, and sore nipples. As a dressing in the hands of the surgeon balsam of Peru moderates the discharge of pus, thereby hastening the processes of granulation and repair. Internally, balsam of Peru is of signal advantage in the treatment of chronic bronchitis and as an inhalation for the relief of chronic laryngitis. It has a salutary action in the treatment of chronic forms of catarrh, rheumatism, and dysentery. Mr. Hommell gives formulas for a number of typical pharmaceutical preparations of this somewhat neglected drug. As a dressing mix with ten times its volume of castor oil. A satisfactory ointment is made by mixing one part of the balsam with two parts each of anhydrous wool fat and white petroleum jelly. If a stiffer ointment or cerate, is desired incorporate one

part of the balsam with four parts of simple cerate. When it is desired to exhibit balsam of Peru in the form of a syrup the following formula is advised: balsam of Peru, 100 grammes; alcohol, 100 c.c.; glycerin, 150 c.c.; magnesium carbonate, 10 grammes; sugar, 700 grammes; water sufficient to make 1 litre. A suitable formula for an emulsion is as follows: balsam of Peru, 100 grammes; olive oil, 250 c.c.; solution of saccharin (National Formulary), 15 grammes; glycerin, 350 c.c.; gum acacia, 150 grammes; cinnamon water sufficient to make 1 litre. An excellent collodion results from mixing collodion with 10 per cent. of balsam of Peru. Since this drug has been very largely adulterated —in fact, in some cases, made artificially—care should be taken to employ only such supplies as will comply with the official tests.

CEREBRO-SPINAL MENINGITIS IN CHRISTIANIA.

SOME interesting observations on an epidemic of cerebro-spinal meningitis in Christiania in 1912 are recorded by that city's medical officer of health, Dr. Ustvedt, in *Norsk Magazin for Laegevidenskaben* for January. As elsewhere, this disease has occurred in epidemics in Norway, where, between the years 1875 and 1877, there were 704 cases with 247 deaths. Christiania was fortunate enough to escape with 10 cases in the period 1866 to 1910. But in 1911 8 cases were notified, and during the first ten months of 1912 there were 189 cases notified and 128 deaths. The first case in this epidemic was sent into hospital with the diagnosis of acute anterior poliomyelitis. The patient died next day, and the necropsy revealed the true state of affairs. New cases were most frequent in March and April, and their rapid diminution as the summer advanced coincides with the observations made elsewhere in several epidemics. The disease ran a most rapid course, patients sometimes dying within a few hours of the appearance of symptoms. Death sometimes occurred even before characteristic cervical rigidity had developed, and the diagnosis was therefore doubtful. In the case of a lad, aged 17, who was ill for only one day, and who was not attended by a doctor, the disease was recognised only at the compulsory necropsy. Some quarters of the town suffered much more than others; but though overcrowding and poverty existed in all the former, similar conditions prevailed in quarters which were relatively immune. The propagation of the disease by healthy carriers was suspected, and cultures were therefore taken from the rhino-pharynx of these suspects. But out of 580 such, meningococci were found only in one man and two children. In both the latter they were only found once, while they were repeatedly found in the man for a period of three weeks. After four weeks two examinations were negative. The difficulties which this method of investigation entails are, indeed, numerous. On 76 occasions suspicious colonies of bacteria were cultivated, which on further cultivation and with agglutination tests were found to be distinct from meningococci. In addition to these pseudo-meningococci, Gram-negative micrococci were found in the throat, and some of these were agglutinated by normal and meningococcic serum taken from the horse. Dr. Ustvedt was surprised to find so few healthy carriers, and he draws attention to the observations made on this point in other epidemics where the percentage of carriers among healthy suspects ranged from 9 to 70. He thinks, therefore, that the prevalence of carriers varies considerably in different epidemics, and that his failure to detect many carriers was not due to faults in his technique which he scrutinised repeatedly. Some infants who had been kept indoors during the winter and spring, and who were attended only by their healthy relatives, contracted the disease; while others escaped who lived in the same house as the sick. In fact, it was the exception for more than one child in a family to contract the disease, and when two of a family did so the infections were synchronous, and must therefore have arisen from a common but unknown source. But though direct infection from one patient to another was seldom detected, this process probably takes place, and one of the nurses of the fever hospital died from the disease. Dr. Ustvedt emphasises the importance of serum therapy in this disease, and he quotes the results of Flexner, who succeeded in reducing the death-rate from 70 or 80 per cent. to 30 per cent. Apparently, however, this method of treatment has not hitherto been extensively practised in Norway.

A NOTE ON THE CAUSE OF BERI-BERI.

IN the *Archiv für Schiffs- und Tropen-Hygiene* Dr. H. Schaumann discussed recently his own experiments done at Hamburg, and those of C. Funk, done at the Lister Institute, on the cure of the polyneuritis of fowls by a substance extracted from rice polishings. Numerous as have been the communications on the subject more information is welcome. From 1 kilogramme of rice polishings he obtains but half a gramme of the curative substance, a nitrogenous base he thinks it is, and probably a derivative of trimethylamine. He considers beri-beri and the polyneuritis of fowls to be caused by underfeeding, deficiency in the supply, digestion, or assimilation of foodstuffs required to build up the tissues or supply energy; that is why there is wasting, and why the affected birds collapse. As the condition can be cured by rice polishings, by yeast, or by beans, it is probably not one single simple substance that cures—it is far more likely that there are several. The curative substance can scarcely be an ordinary foodstuff, for the weight gained by the bird after administration is far greater than the weight of the substance ingested. Thus Schaumann cured a pigeon with 1 gramme of rice bran. As it produces its effect in minute doses, and as these effects persist for a long time, the curative principle is probably a ferment. What use does it subserve in the rice grain? It is found with the phosphorus of the grain in the pericarp; the endosperm has hardly any phosphorus—too little, analogy suggests, to support the vital processes of growth without help from the phosphorus in the pericarp; and with that phosphorus is associated this ferment, ready at the appropriate time to transform it into the combination which shall enable it to facilitate the growth of the plant. This ferment is, it is suggested, chemically and physiologically related to betaine, found in plants where metabolism is most active.

THE Lettsomian lectures of the Medical Society of London will be delivered on Feb. 3rd and 17th, and March 3rd, by Mr. James Berry, on the Surgery of the Thyroid Gland, with special reference to Exophthalmic Goitre. The lectures will be illustrated by specimens and photographs which will be on view each evening from 8.30 P.M., the lectures commencing at 9. On Monday, Feb. 10th, Mr. Edmund Owen will open a discussion on Early Operation in Appendicitis. The following gentlemen have signified their intention to take part in the discussion: Mr. W. H. Battle, Sir George T. Beatson, Mr. C. P. Childe, Mr. A. M. Connell (Sheffield), and Mr. G. Grey Turner. The honorary secretaries will be pleased to receive the names of other persons desirous of taking part in the discussion. The anniversary dinner of the society will take place at the Whitehall Rooms, Hôtel Métropole, London, on Wednesday, March 5th, at 7.30 P.M.

FOR some time past it has been known to those within his private circle that Sir George A. Turner, late medical officer

of health for Cape Colony and superintendent of the leper asylum at Pretoria, has himself become infected with leprosy. This sad news has now been made public, within a few weeks of the appearance of Sir George Turner's name upon the list of New Year's honours. His admirable work in South Africa is well known to many of our readers, and the sympathy of the medical profession goes out to him in his affliction.

THE Home Secretary has appointed Professor Sheridan Delépine and Dr. Arthur Sellers, of Manchester; Mr. Kenneth W. Goadby, of London; Dr. H. A. Schölberg, of Cardiff; and Dr. O. J. Kauffmann, of Birmingham, to be medical referees in connexion with cases of industrial disease (except ophthalmic and certain other cases) under the Workmen's Compensation Act.

WE are delaying the publication of Major Robert McCarrison's third Milroy lecture upon the Etiology of Endemic Goitre, so that it can appear next week at the same time as the fourth lecture, an illustrative plate being common to both of them.

THE annual oration of the Hunterian Society will be delivered at St. Bartholomew's Hospital, in the library, by Dr. Edward W. Goodall, on Wednesday evening, Feb. 12th, at 9 P.M., the subject being Serum Sickness.

Dr. James Cran has been appointed an unofficial member of the Legislative Council of the colony of British Honduras.

SANITATION AT SEA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE NEW FRENCH LAW AND THE NEW FRENCH SHIPS.

When the French Line is Preferred.

THE yearly increase of traffic between the United States and Europe adds proportionately to the importance of providing healthy accommodation for so many passengers. The Washington International Congress of Hygiene having provided another occasion for crossing the Atlantic, I have naturally profited by this opportunity to acquire further practical experience concerning the sanitation of the great ocean liners. These liners are now so numerous that it is not easy to decide which to select; but on the present occasion there were two good reasons in favour of the French Transatlantic Line. A recent law governing the sanitation of French ships has been enforced. Apart from these novel facts, there is the old-standing reason which leads some travellers to give preference to the French line, and that is the French *cuisine*. Many years ago one of the leading tenors at Covent Garden opera surprised me by saying he was going to Havre to take a ship for New York, though from London it was more easy to reach Liverpool, where finer ships sailed for the United States. But the tenor explained, and his wife cordially acquiesced, that at sea they suffered from nausea, and they needed dishes cunningly prepared and aromatically flavoured to tempt their appetites. This explanation has remained in my mind as accounting for the preference which even English and Americans occasionally give to foreign lines and the comparative scarcity of foreign passengers on English ships. To-day another and, from the sanitary point of view, a more important reason explains such preference. The new French law has established a higher standard of sanitation than that enforced on British ships, and it is now beginning to come into operation. Thus, the French Transatlantic Line has built two new ships—the *Rochambeau* and *La France*—since the recent law came into operation. The older ships have also benefited, for even where the law has no retrospective action the shipowners honestly strive to keep their old boats as much up to date as possible. A most notable and beneficent illustration of this fact is the abolition throughout of the third row of bunks in the emigrants' quarters. For instance, the *Provence* and the *Chicago*, the two ships on which I travelled on my last voyages to and from the United States, were built before the law was passed and the emigrants in the steerage were originally arranged to sleep in three rows of bunks placed one above the other. There are now only two rows, thus giving each individual one-third more air space than previously, reducing in the same proportion the number of passengers. The horrors so often described of an overcrowded steerage have consequently been greatly mitigated. On board the *Provence*, where they formerly provided for 850 emigrants, there are now only 520 bunks.

The French Steerage.

This change is all the more necessary and welcome, as the class of emigrants who patronise the French line are a very uncleanly set of people. Many come from the East, Levantines and Syrians, while others hail from the Balkans and Southern Europe, especially Italy. These people are not clean in their persons, and present a great and unfavourable contrast to the wholesome, orderly, well-washed Scandinavians who pass through Liverpool on their way to America. Most of the steerage passengers arrive in trains that have come straight through to Havre from Modena on the Italian frontier. The American laws protect the dignity of immigrants and insist that first-class passengers shall not be allowed to visit the steerage. They also cause inscriptions to be posted up stating how many passengers may occupy each part of the ship. The French, on their side, incur considerable expense and trouble to provide baths and douches, but the emigrants never use them. The United States regulations are very stringent, yet they cannot make people wash themselves. On the Italian and Greek ships, I am told, matters are even worse. Nevertheless, when I inspected the *Provence* in mid-Atlantic and during a gale, that is when things were likely to be at their worst, I was surprised to find that even the closets in the steerage were clean and free from odour, in spite of the great crowd of people. On all sides air was being pumped in, and there was also a certain amount of suction to draw off vitiated air. This was not scientifically regulated, however, as to the precise amount for every part of the ship. On the *Rochambeau*, a new ship built since the recent law, the ventilation is more carefully and systematically organised. Nevertheless, even on the older ship the *Provence*, what with the large central descent to the hold providing a vast unencumbered air space, and the mechanical ventilation, the air in the steerage was quite sweet. Though a great number of the emigrants were sick there was no unpleasant odour. But there was nothing to harbour bad smells. The decks are of iron. The framework for the beds or bunks is of enamelled iron, the bed itself has no mattress, but is made with a piece of canvas through which the air passes freely and which is taken off and washed for each voyage. It is not drawn tight over the iron frame but hangs loosely and yields to pressure like a hammock, and is therefore fairly comfortable while it is less likely to breed vermin than a mattress.

Ventilation on Board the "Provence."

On the upper, or navigation, deck of the *Provence* there are 32 mechanical ventilators. The current of air coming out of them is very strong and they communicate with every part of the ship, but especially with the third-class and emigrant department. Sometimes these air extractors work so hard that the passengers complain of the cold. If many such complaints are made the velocity of the fans is slightly reduced. The facts, however, that the air is drawn out and that there are no small air inlets render the draught nuisance less perceptible. But the arrangement accentuates the unpleasant effect of opening a porthole. Not only does this result in a terrible draught between the open porthole and the nearest extractor, but all the energies of the mechanical ventilator are now wasted in pumping fresh air from the open porthole on to the navigation deck above, where it is not in the least wanted. Of course, while this energetic and wasteful operation is going on, the other parts of the ship, and especially the far corners, which should be relieved by the mechanical ventilator remain without ventilation. The greatest difficulty on board is to deal with those persons who cannot believe that there is any ventilation unless they feel a draught. Such people would destroy all well-established systems of ventilation. They have yet to

learn that while the air should be constantly renovated, it should not travel at an abnormally quick rate.

The Failure of Natural Ventilation.

On board the *Provence* there is a good illustration of the failure of natural ventilation. Perhaps the most defective part of the ship, from this point of view, is the first-class dining saloon. Here no less than 202 passengers can be seated. It is a beautifully decorated saloon, but there is no dome in the centre. The ceiling is level, and seems low considering the great size of the room. Such mechanical ventilation as exists is insufficient, and consequently those who are seated in the centre clamour to have some of the portholes opened; while, when this is done, those sitting near the portholes are equally energetic in demanding their immediate closure. Near to, the draught is insupportable, but at a distance, when diffused through space and its velocity much reduced, it becomes quite agreeable.

Wrecks, Lifeboats, and Rafts.

Though I went on the navigation deck primarily to see the ventilators, it was only natural to speak about the life-saving apparatus which surrounded us. The captain of the *Provence* thought that with the advent of wireless telegraphy the position had entirely altered. Lifeboats were essential when, in the event of the ship going down, it was a question of navigation. But now the object is to remain as near as possible to the spot where the wreck has taken place, as described by the telegraphist when appealing for help. It will often be only a matter of keeping afloat for a few hours until help arrives. For this rafts will suffice, but a great quantity are required, and consequently they must be easily launched and easily stored. The captain thought that rafts shaped somewhat like the shallow trays used for developing photographs would suit. They could be easily fitted one inside the other and handed out as they were wanted, the smallest coming first. Shortly after the *Titanic* disaster I travelled to Rotterdam in the very comfortable boats of the Batavier Line. The *Batavier No. III.* had on board a de Vos lifeboat. This life-saving invention has an inner wooden body or frame, but this might be smashed by being dashed against rocks or the side of the ship. It existed only for convenience sake. The real thing was the outer form, which was several inches thick, and consisted of flexible basket wickerwork. It was absolutely impossible to sink it; and though it might be beaten out of shape it could not be broken. Whatever happened it would remain on the surface of the water. But it was a clumsy structure, heavy to pull, and difficult to steer or navigate. Thus, though it had drawbacks, it was wanting in just those qualities which the captain of the *Provence* said were no longer so necessary.

The Magnificent "La France."

The *Provence*, built at St. Nazaire, made her first trip to the United States early in 1906. Crossing the Atlantic in six days, this ship was then the quickest, most luxurious, and largest steamer owned by the Compagnie Générale Transatlantique. Now, however, her conspicuous place as the foremost ship has been taken by *La France*, which commenced service in April, 1912. Whereas the *Provence* was described as a ship of 14,744 tons, *La France* is estimated at 23,500 tons, and cost £1,080,000 to build. Undoubtedly this is the biggest, the most luxurious, and most beautiful liner the French people have ever placed on the seas. It can carry 535 first-class, 442 second-class, 224 third-class, and 724 emigrants, while the crew numbers 560. It is thus a floating town with 2485 inhabitants drawn from all classes of the community, and it has been built in strict accordance with the most recent and best sanitary law. While in dock at New York I was able to visit this ship and have some talk with members of the crew. They readily agreed that the law had brought about a real improvement, especially if the present accommodation is compared with the impossible places the firemen and engineers used to occupy, sometimes over the engine, where the heat was unbearable. Now they have comparatively spacious cabins, better washing facilities, and indeed the worst fault that still remained was the maintenance of dirty habits. In spite of the great improvements effected I did hear some complaint that the officers and petty officers connected with the engineering department, though considered of equal rank and receiving equal salaries, are not so well berthed as their colleagues of the navigation department. The third-class passengers occupy small cabins, usually containing four berths. These have straw mattresses, the straw being burnt and the tick washed after each journey. The emigrants have the same sort of bunks as on the *Provence*, and plenty of air space, but the smoking-rooms, the lounge for women, and the dining-room cannot for a moment be compared with the comparatively luxurious accommodation provided for the third-class passengers on such ships as the *Lusitania* or the *Mauretania*.

Volume of Air Supplied by Ventilating Fans.

La France is ventilated by 40 ordinary fan motor ventilators and 32 thermotanks. The electric power used for ventilating and other purposes is equal to 2400 horse-power. Each mechanical ventilator is reputed to be able to supply or to extract from 4000 to 8000 cubic metres of air per hour. When, however, I came to inquire whether any scientific experiments had been made to ascertain whether in reality this amount of air could be delivered just where it was wanted, there was no satisfactory answer forthcoming. The fact is that here, as on most ships, far too much is taken for granted. Yet I must not let myself become too severe a critic. After all, a ship is not a laboratory for scientific ventilation. Its object is to carry cargo and passengers across the seas in security and comfort. It is scarcely to be expected that the engineers will devote much of their time measuring the exact volume of air reaching every part of the ship. But if they did, they would make some disquieting discoveries. What a fan yields when the measurements are made close to the fan and what actually reaches the farther ends of the air shafts vary greatly. As much air is lost on the way as ever reaches its destination. At Liverpool I came across a fan the maker said would yield 30,000 cubic feet per minute. When tested in a free discharge it yielded only 26,000 cubic feet, but when this air was directed down a shaft and into the engine-room the delivery was only about 7000 cubic feet, and this would vary according to the nature of the air trunks. The starting platform of the engine-room on a large British ship was provided with two fans, each said to deliver 20,000 cubic feet per minute. Though the air shaft was quite straight the amount of air actually received varied from 13,000 to 15,000 cubic feet per minute. Where the shafts have many branches the amount would fall to only 7000 cubic feet. In such circumstances, particularly if the air shafts travel long distances and twist a good deal, it would seem to be prudent to rely on receiving not more than about a third of the volume of air the fan is stated to be capable of supplying. Nevertheless this may suffice, for there has been a tendency to exaggerate the importance of quickly changing the air.

The Rapid Changes of Temperature.

On *La France* in the large saloons the thermotanks pump in warmed air near the floor, while ordinary mechanical ventilators draw this air off through apertures made in the fresco work and carving which ornament the ceilings. In the very handsome dining saloon there is a dome which is open all round at two different levels, thus the ascending air has a very easy means of exit. In an elegant Louis XIV. saloon the air is also extracted all round the ceiling. The real difficulty is encountered in the cabins below. The principal obstacle is the very rapid change of temperature. Thus in crossing the Grand Banks the sea water and the surrounding temperature are very cold, and to counterbalance this the pipes down which the hot air travels are very well supplied. But when the ship emerges from the cold currents and enters the Gulf stream there is an immediate rise in the temperature of the sea water amounting to 20° F. or more. The supply of hot air is at once turned off, but the air shafts and all the surroundings retain for a long time the heat they have acquired. Then the passengers complain, for it takes much longer to cool down a ship than to pass from one current into another. Thus from Dec. 15th to 16th last, when at midday of the latter date my ship reached latitude 41·05 N. and longitude 62·50, the temperature of the air and the sea at 6 o'clock on the evening of the 15th was 50° F. At midnight the air had risen to 52° and the water to 73°, but at 6 in the morning the air was 50° and the water only 48°. The next day the temperature of the air varied 10° and that of the water 20°. Of course, the temperature of the water in which a ship is immersed affects considerably the temperature within the ship. It will be seen that great and rapid as are the

fluctuations of the atmosphere those of the water are still more extreme and sudden. The fact is becoming more and more evident that not only is fresh and warmed air needed, but also that means of cooling the air are necessary before we shall attain perfection.

(To be continued.)

ROYAL MEDICAL BENEVOLENT FUND.

AT the January meeting of the committee 19 cases were considered and grants amounting to £172 voted to 18 of the applicants. Appended is an abstract of the cases relieved :—

Widow, aged 60, of M.R.C.S. Supported herself for some years after the death of her husband by acting as housekeeper, &c., but is now in failing health. Expects to be elected to a pension from another society in a few months, and is temporarily provided with a home by a relation who can ill afford to help. Asks for a small grant towards the expenses of the home. Voted £5.

Widow, aged 38, of M.R.C.S., L.R.C.P. At husband's death about four years ago the small estate was left in trust for the elder child, now aged 9 years, and applicant has been unable to earn a living because compelled to give constant attention to a younger child. Her father, too old for work, and living on his savings, has given them a home, but cannot continue to do so unassisted. Voted £5.

Daughter, aged 58, of late M.R.C.S. Maintained herself for several years as a companion, but has recently broken down in health and is quite unfitted for any permanent employment. Relieved twice, £24. Voted £12.

Daughter, aged 61, of late M.R.C.S. Supplements a pension of £21 a year by needlework, &c. Sight failing. Relieved six times, £72. Voted £9.

Widow, aged 75, of L.R.C.P. Edin. Supplements an old age pension by letting lodgings; has recently had an acute illness of several weeks' duration. Relieved once, £12. Voted £12.

Daughter, aged 42, of late M.R.C.S. Is a complete invalid and practically dependent on a sister, who, having been obliged to nurse her mother, has been unable to earn for some months past. Relieved three times, £30. Voted £12.

Daughter, aged 57, of late M.R.C.S. Has been unable to support herself owing to ill-health for many years past, and is dependent on two half-sisters who have to earn their living. Relieved eight times, £71. Voted £10.

Widow, aged 67, of M.R.C.S. Quite unprovided for at husband's death a few years ago. Endeavours to support herself by receiving paying guests; slight help from friends. Relieved twice, £12. Voted £6.

Widow, aged 64, of L.S.A. Earns about 15s. a week by selling sweets, but has to maintain a delicate daughter who is unfitted for regular occupation. Relieved five times, £60. Voted £12.

Widow, aged 84, of M.R.C.S. Only income an old-age pension and an annuity of £10. Children unable to help. Relieved twice, £12. Voted £6.

Widow, aged 55, of L.R.C.S. Edin. Asks for assistance to remove to a seaside place, where a lodger she has had for many years is ordered to live, and where applicant will obtain a larger house for a smaller rent and so be able to let more rooms. Relieved five times, £47. Voted £15.

Daughter, aged 75, of late M.R.C.S. Income £20 a year, and earns a few shillings a week by needlework. Health and sight both failing. Relieved 14 times, £137. Voted £5 and to be recommended to apply for an old-age pension.

Widow, aged 40, of M.D. R.U.I. Receives £25 a year for the benefit of her child, aged 3½, and is given rooms and light in exchange for services as caretaker. Relieved twice, £20. Voted £5.

Daughter, aged 65, of late M.R.C.S. Only income a small allowance from a society for the relief of the blind. Relieved seven times, £66. Voted £12.

Daughter, aged 51, of late F.R.C.S. No income. Had a situation as cook, but was obliged to give it up on account of ill-health, and finds it very difficult to get employment for which she is fitted. Relieved seven times, £40. Voted £12.

Widow, aged 45, of L.R.C.P. Edin. Unprovided for at husband's death a few years ago, and being lame and in bad health is unable to obtain a paid post. At present receives a home at a boarding house for a few shillings a week in exchange for services. Relieved six times, £34. Voted £10.

Daughter, aged 37, of late M.R.C.S. Supplements small earnings from letting rooms, by making marmalade, keeping poultry, &c. Health too delicate to allow regular employment. Relieved eight times, £73. Voted £12.

Widow, aged 60, of L.R.C.P., L.R.C.S. Irel. No income, and unfitted for employment owing to the loss of a hand and general bad health. Children unable to help. Relieved nine times, £80. Voted £12.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

BRISTOL EYE HOSPITAL.—The annual meeting of subscribers to the Bristol Eye Hospital was held on Jan. 17th under the presidency of the Lord Mayor. The medical report stated that during 1912 the in-patients numbered 516, a slight decrease compared with 1911. 8805 out-patients were treated, an increase of 547 over the previous year. The financial statement showed the expenditure was about £2880 and the receipts about £2350, leaving an adverse balance of £500.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,764 persons, 8850 births and 5819 deaths were registered during the week ended Saturday, Jan. 25th. The annual rate of mortality in these towns, which had been 15·7, 15·4, and 16·5 per 1000 persons living in the three preceding weeks, further rose to 17·0 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 16·2, or 0·3 per 1000 below the average rate recorded in London during the same period. The death-rates in the several towns ranged from 7·6 in Gillingham, 9·1 in Edmonton, 9·5 in Hornsey, 10·3 in Croydon and in Gloucester, and 10·5 in Enfield, to 24·3 in Sunderland, 24·5 in South Shields, 25·2 in Dewsbury, 26·0 in Bootle, and 26·7 in St. Helens.

The 5819 deaths from all causes in the 96 towns were 162 in excess of the number in the previous week, and included 505 which were referred to the principal epidemic diseases, against 506 and 526 in the two preceding weeks. Of these 505 deaths, 275 resulted from measles, 81 from whooping-cough, 67 from infantile diarrhœal diseases, 47 from diphtheria, 19 from scarlet fever, and 16 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·5 per 1000, and coincided with the rate in the three preceding weeks. The deaths attributed to measles, which had been 300, 268, and 277 in the three preceding weeks, were 275 last week, and caused the highest annual death-rates of 3·0 in Edmonton and in West Bromwich, 3·6 in Bootle, 4·0 in Swindon, in Wigan, in Preston, and in Sheffield, and 4·2 in St. Helens. The deaths referred to whooping-cough, which had been 57, 55, and 61 in the three preceding weeks, rose to 81 last week, and included 30 in London, 9 in Liverpool, 4 in Hull, 4 in Newcastle-on-Tyne, and 3 in Bristol. The fatal cases of diarrhœa and enteritis among infants under 2 years of age, which had been 78, 72, and 87 in the three preceding weeks, declined to 67 last week; 20 deaths were registered in London, 7 in Birmingham, 5 in Manchester, 3 in Liverpool, and 3 in Sheffield. The deaths attributed to diphtheria, which had been 42, 64, and 59 in the three preceding weeks, declined to 47 last week, and included 11 in London and 3 each in Stoke-on-Trent, in Bolton, in Bradford, and in Swansea. The deaths referred to scarlet fever, which had been 30, 32, and 25 in the three preceding weeks, further fell to 19 last week, of which number 3 occurred in London, 2 in Birmingham, and 2 in Preston. The fatal cases of enteric fever, which had been 13, 15, and 17 in the three preceding weeks, were 16 last week; 5 deaths were recorded in London, 2 in West Ham, and 2 in Stoke-on-Trent.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospitals, which had steadily declined from 2112 to 1828 in the four preceding weeks, had further fallen to 1784 on Saturday last; 215 new cases were admitted to these institutions during last week, against 170, 202, and 204 in the three preceding weeks. These hospitals also contained on Saturday last 930 cases of diphtheria, 784 of measles, 285 of whooping-cough, and 40 of enteric fever, but not one of small-pox. The 1543 deaths from all causes in London were 111 in excess of the number in the previous week, and were equal to an annual death-rate of 17·8 per 1000. The deaths referred to diseases of the respiratory system, which had steadily risen from 285 to 353 in the five preceding weeks, further rose to 393 last week, and were 60 above the number registered in the corresponding week of last year.

Of the 5819 deaths from all causes in the 96 towns last week, 186 resulted from various forms of violence and 457 were the subject of coroners' inquests. The causes of 54, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified last week in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, and in 50 other smaller towns. The 54 uncertified causes of death last

week included 10 in Birmingham, 7 in Liverpool, and 3 each in Stoke-on-Trent, in Coventry, in St. Helens, and in Blackburn.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,400 persons at the middle of this year, 1222 births and 875 deaths were registered during the week ended Saturday, Jan. 25th. The annual rate of mortality in these towns, which had been 17·6, 17·3, and 18·5 per 1000 in the three preceding weeks, further rose to 20·2 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 18·4, or 2·2 per 1000 above the corresponding rate in the 96 large English towns. Among the several Scotch towns the death-rates last week ranged from 10·5 in Kilmarnock, 12·7 in Motherwell, and 13·2 in Falkirk, to 24·6 in Leith, 25·5 in Greenock, and 26·5 in Coatbridge.

The 875 deaths from all causes were 73 in excess of the number in the previous week, and included 80 which were referred to the principal epidemic diseases, against 57 and 64 in the two preceding weeks. Of these 80 deaths, 40 resulted from whooping-cough, 20 from infantile diarrhœal diseases, 13 from diphtheria, 5 from scarlet fever, 1 from enteric fever, and 1 from measles, but not one from small-pox. These 80 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000, against 1·5 in the 96 large English towns. The deaths attributed to whooping-cough, which had been 29, 30, and 36 in the three preceding weeks, further rose to 40 last week, and included 30 in Glasgow, 3 in Edinburgh, 2 in Paisley, and 2 in Leith. The deaths of infants under two years of age referred to diarrhœa and enteritis, which had been 11, 7, and 10 in the three preceding weeks, rose to 20 last week, of which number 11 occurred in Glasgow, 3 in Dundee, and 2 in Coatbridge. The fatal cases of diphtheria, which had been 13, 10, and 10 in the three preceding weeks, were 13 last week, and comprised 7 in Glasgow, 3 in Aberdeen, 2 in Dundee, and 1 in Motherwell. The 5 deaths attributed to scarlet fever last week were equal to the average in the three preceding weeks; 3 deaths were recorded in Glasgow and 2 in Leith. The fatal cases of measles and enteric fever were registered in Glasgow.

The deaths referred to diseases of the respiratory system in the 16 Scotch towns, which had been 167, 148, and 162 in the three preceding weeks, further rose to 188 in the week under notice; 27 deaths were attributed to different forms of violence, against 27 and 24 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,199,180 persons at the middle of this year, 714 births and 490 deaths were registered during the week ended Saturday, Jan. 25th. The annual rate of mortality in these towns, which had been 22·0, 21·0, and 22·2 per 1000 in the three preceding weeks, declined to 21·3 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Irish towns averaged 21·6 per 1000; in the 96 large English towns the corresponding rate did not exceed 16·2, while in the 16 Scotch towns it was equal to 18·4 per 1000. The annual death-rate recorded in the several towns last week was equal to 19·7 in Dublin (against 17·8 in London and 22·3 in Glasgow), 24·5 in Belfast, 21·8 in Cork, 30·5 in Londonderry, 16·2 in Limerick, and 19·0 in Waterford, while in the remaining 21 smaller towns it did not exceed 17·8 per 1000.

The 490 deaths from all causes in the 27 Irish towns were 20 fewer than the number in the previous week, and included 39 which were referred to the principal epidemic diseases, against 53 and 49 in the two preceding weeks. Of these 39 deaths, 17 resulted from measles, 7 from diarrhœal diseases, 6 from diphtheria, 5 from scarlet fever, and 4 from whooping-cough, but not one from small-pox or from enteric fever. These 39 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000, against 1·5 per 1000 in the 96 large English towns and 1·8 in the 16 Scotch towns. The deaths attributed to measles, which had been 20, 22, and 22 in the three preceding weeks, declined to 17 last week, and comprised 13 in Belfast, 3 in Tralee, and 1 in Newry. The deaths referred to diarrhœa and enteritis, which had been 12, 17, and 14 in the three preceding weeks, declined to 7 last week, all of which related to infants under 2 years of age; 4 deaths were recorded in Belfast, 2 in Dublin, and 1 in Newtownards. The fatal cases of diphtheria, which had been 8, 5, and 6 in the three preceding weeks, were again 6 last week, and comprised 4 in Dublin and 2 in Belfast. The 5 deaths referred to scarlet fever last week were slightly in excess of the average in recent weeks and included 4 in Belfast and 1 in Cork. The 4 deaths attributed to whooping-cough, of which 2 were registered in Dublin and 2 in Waterford, were equal to the average in the three preceding weeks.

The deaths referred to diseases of the respiratory system, which had steadily risen from 85 to 113 in the four preceding weeks, further rose to 135 in the week under notice. Of the 490 deaths from all causes, 137, or 28 per cent., occurred in public institutions, and 11 resulted from different forms of violence. The causes of 24, or 4·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: E. H. Hodnet de Courtmacsherry to the *Indefatigable*; R. S. Bernard to the *Royal Arthur*, on recommissioning (for medical charge on voyage out), and to the *Tamar*; E. G. E. O'Leary to the *Royal Arthur* for medical charge on voyage home; R. H. J. Browne to the *Hyacinth*, on completing, and for general staff duties on transfer of flag; T. D. Halhan to the *King George V.* for general staff duties on transference of flag; H. F. Iliewicz to the *Hercules* on transfer of flag; J. A. Moon to the *President*, additional, for senior medical officers' course; C. Strickland to the R.M. Division, Portsmouth; and M. C. Langford to the *Thunderer*. Staff-Surgeons: D. W. Hewitt to the *President*, additional, for Medical Department, Admiralty; and N. H. Harris to the *Egmont*, additional, for the *Proserpine*, and for medical charge of ratings on voyage to Malta, and to the *Proserpine*, on commissioning. Surgeons: W. E. Lloyd to the *Tamar*; C. F. Willes to the *Nightingale*; and H. E. Scargill to the *Royal Arthur*, on recommissioning, for voyage out, and to the *Kinsha*, on arrival.

ARMY MEDICAL SERVICE.

Colonel Richard W. Ford, D.S.O., on completion of four years' service in his rank, is placed on the half-pay list (dated Jan. 26th, 1912).

Lieutenant-Colonel Charles E. Faunce, from the Royal Army Medical Corps, to be Colonel, vice R. W. Ford, D.S.O. (dated Jan. 26th, 1913).

Major George B. Stanistreet, Royal Army Medical Corps, to be a Deputy Assistant Director-General at the War Office, vice Lieutenant-Colonel E. Eckersley (dated Jan. 20th, 1913).

ROYAL ARMY MEDICAL CORPS.

Major Frederick W. Hardy to be Lieutenant-Colonel, vice C. E. Faunce (dated Jan. 26th, 1913).

The undermentioned Captains to be Majors (dated Jan. 29th, 1913):—George F. Sheehan, Eugene Ryan, and John H. Barbour.

Lieutenant-Colonel Sir William B. Leishman, on appointment as Honorary Physician to His Majesty the King, has been promoted to the brevet rank of Colonel. Lieutenant-Colonel J. S. Green has been selected for appointment as officer in charge of the Military Hospital at Fermoy. Lieutenant-Colonel R. J. Windle has taken up command of the Military Hospital at Poona. Lieutenant-Colonel H. H. Brown, on return from a tour of service at Aden, has taken up duty at Newcastle-on-Tyne. Lieutenant-Colonel E. Eckersley, Deputy Assistant Director-General Medical Division, War Office, has relinquished his appointment on completion of tenure. Lieutenant-Colonel M. O'D. Braddell, in charge of the Military Hospital at Cawnpore Cantonment, has been granted eight months' general leave of absence home from India. Lieutenant-Colonel J. Donaldson has been selected to command the Military Hospital at

Nasirabad, in succession to Lieutenant-Colonel C. W. R. Healey. Lieutenant-Colonel A. T. I. Lilly has been granted an extension for one year of his command of the Station Hospital at Belgaum by the Commander-in-Chief in India.

Major G. B. Crisp has been appointed to the London District. Major J. Dorgan, specialist sanitary officer in the Cork District, has been selected to attend the officers' classes of instruction at the School of Cookery in the Aldershot Command. Major J. P. Silver has been transferred from the Dublin District to the Cork District. Major R. J. Blackham, Deputy Assistant Director of Medical Services (Sanitary Branch) in the First Peshawar Division, has been selected for appointment as Honorary Surgeon to the Viceroy and Governor-General of the East Indies. Major J. W. West, specialist in operative surgery, has taken up duty at the Military Hospital, Rawal Pindi, on transfer from Murree Cantonment. Major H. Herrick, in charge of the Military Hospital at Naini Tal, has been selected for appointment as Senior Medical Officer on board the transport s.s. *Rewa*, leaving Karachi for Southampton with time-expired troops on Feb. 12th next. Major H. H. Norman, commanding the Military Hospital at Shwebo, Upper Burma, has been reverted to the Home Establishment at the expiration of his leave of absence. Major H. G. Pinches has been appointed in charge of the Military Hospital at Tanglin and officer commanding No. 32 Company of the Royal Army Medical Corps stationed in the Straits Settlements. Major F. S. Walker has been transferred from the Military Hospital at Fermoy to Waterford. Major R. S. H. Fuhr, D.S.O., has taken up duty as Officiating House Governor and Medical Superintendent at King Edward VII. Convalescent Home for Officers of the Navy and Army, Osborne, Isle of Wight, during the absence on leave of Colonel Douglas Wardrop. Major H. A. Davidson has been transferred from the Military Hospital at the Curragh Camp to Kildare for general duty. Major H. A. Bransbury, specialist in dermatology and venereal diseases at Ahmednagar, has been transferred to the Military Hospital at Belgaum. Major P. H. Henderson has taken over charge of the Military Reception Hospital at Portsmouth. Major A. R. C. Parsons has been appointed Specialist in Operative Surgery at Edinburgh and Company Officer to No. 13 Company of the Royal Army Medical Corps. Major J. J. W. Prescott, D.S.O., has been transferred from the Military Hospital at Cosham to Portland for duty. Major J. Poe has taken over charge of the Military Families Hospital at Bloemfontein. Major E. McDonnell has been appointed to hold charge of the Military Hospital at St. George's, Bermuda. Major A. H. O. Young has joined at Strensall for duty. Major A. E. Smithson has been appointed to hold Charge of King George V. Military Hospital at Dublin.

Captain J. R. Lloyd, medical officer in charge of the gun carriage factory at Jubbulpore, has been granted six months' general leave of absence home from India. Captain E. D. Caddell, in charge of the Followers and Cantonment General Hospital at Karachi, has been placed under orders for transfer from the Fourth (Quetta) Division to the Aden Brigade for a tour of service. Captain H. T. Stack has taken up duty at the Military Hospital, Bareilly, on transfer from Ranikhet Cantonment. Captain D. P. Johnstone has left the Military Hospital at Chester for service in India. Captain S. C. Bowle, specialist in dentistry, has been transferred from Dublin to Newbridge. Captain F. A. McCammon has arrived home for duty from India, tour expired. Captain R. C. Hallowes has been transferred from the Military Hospital at Armagh to Holywood, Belfast District, for duty with the 1st Battalion Norfolk Regiment. Captain J. W. Houston has taken up duty at the Military Hospital, Colaba, Bombay, on transfer from Belgaum Cantonment. Captain D. Coutts and Captain J. L. Wood, stationed at Bareilly and Naini Tal respectively, have been placed in Medical Charge of time-expired troops proceeding from Karachi to Southampton on board the transport s.s. *Dufferin*. Captain F. Forrest has been reverted to the Home Establishment on the termination of his leave of absence from India. Captain W. H. O. Riordan has been transferred from the Military Hospital at Barian Cantonment, Murree Hills, to Ghangla Sali, Second (Rawal Pindi) Division. Captain T. S. Dudding, Company Officer No. 9 Company, Royal Army Medical Corps at Colchester, has proceeded to South Africa on trooping duty with permission to avail himself of one month's leave of absence on arrival at Cape Town. Captain R. W. M. Paine has arrived home for duty from India, tour expired. Captain J. R. Foster, in charge of the Followers Hospital at Neemuch, has arrived home on leave of absence for eight months from India. Captain W. Bennett has been placed under orders for transfer from the Eighth (Lucknow) Division of the Southern Army in India to Burma as Deputy Assistant Director of Medical Services (Sanitary Branch), in succession to Major R. Tilbury Brown, who has been appointed to command the Military Hospital at Darjeeling. Captain W. C. Smales has joined for duty at Weymouth.

Lieutenant D. Reynolds, serving at Limerick, has been placed under orders to embark for service in India about Feb. 12th. Lieutenant T. E. Osmond has taken up duty in the London District. Lieutenant G. O. Chambers has been transferred from Leicester to Lichfield for duty at the Military Hospital. Lieutenant W. Bissett and Lieutenant T. A. Weston have embarked for a tour of service in India. Lieutenant R. K. Mallam has been transferred from Aldershot to Bordon.

INDIAN MEDICAL SERVICE.

Colonel R. B. Roe has taken up duty at Headquarters, Ambala Cantonment, as Assistant Director of Medical Services to the Sirhind and Jullundur Brigades, in succession to Colonel R. W. S. Lyons, transferred to the Third (Lahore) Division as Assistant Director of Medical Services.

Lieutenant-Colonel A. L. Duke, Residency surgeon in Baluchistan, has been granted three months' leave of absence by the Foreign Department of the Government of India. Lieutenant-Colonel W. Ronaldson Clark, civil surgeon of the first class, has been appointed Civil Surgeon at Lahore and Professor of Forensic Medicine and Toxicology at the Government Medical College, Lahore, on return from leave of absence home from India, relieving Major M. Corry, transferred. Lieutenant-Colonel E. A. W. Hall has arrived home on leave of absence from India.

Major W. H. Tucker has taken up duty at Travancore, Madras Presidency, as Physician to the Durbar. Major F. H. G. Hutchinson has been granted 16 months' leave of absence, combined with furlough, home from India. Major C. A. Sprawson has been selected for appointment as Fellow of the Allahabad University. Major W. R. Battye, agency surgeon of the second class, has been deputed to attend the special courses of instruction in bacteriology at the Central Research Institute, Kasauli. Major C. H. Bensley has been confirmed in his appointment in the Jail Department of the Central Provinces. Major L. P. Stephen and Major E. C. Macleod have arrived home on leave of absence from India. Major F. F. Elwes has taken up the officiating appointment of Surgeon on the personal staff of H.E. the Governor of Madras Presidency, in succession to Major L. Erskine Gilbert.

Captain D. Heron has been selected for appointment as Medical Officer in Charge of the Consulate at Siestan by the Foreign Department of the Government of India. Captain D. D. Kamat has been selected for appointment as Medical Officer to the 8th Regiment of Rajputs stationed at Hong-Kong, in succession to Captain D. R. Green, who has been placed under orders for transfer to Cannanore on appointment as medical officer to the 88th Carnatic Infantry. Captain A. H. Proctor, officiating resident surgeon at the Medical College Hospital, Calcutta, has been appointed to officiate as Civil Surgeon of the second class, and detailed for duty at Serampore. Captain A. M. Jukes has taken up duty as Deputy Sanitary Commissioner, Metropolitan Circle, Calcutta. The services of Captain L. Cook have been placed temporarily at the disposal of the Sanitary Commissioner of Bihar and Orissa. Captain G. L. C. Little and Captain R. D. Willcocks have arrived home on leave of absence from India. Captain F. P. Wernicke has been appointed Civil Surgeon at Hoshangabad, in succession to Captain J. M. A. MacMillan, who has been transferred temporarily to Jubbulpore for duty. The services of Captain W. S. J. Shaw have been placed temporarily at the disposal of the Government of Bombay. Captain G. I. Davys has received one month's extension of his leave of absence home from India.

Lieutenant H. S. Cormack has taken up duty as Specialist in Ophthalmology at headquarters of the Second (Rawal Pindi) Division of the Northern Army.

TERRITORIAL FORCE.

Royal Army Medical Corps.

No. 18 Field Ambulance: Lieutenant Wilson H. P. Hey to be Captain (dated Dec. 12th, 1912).

1st Home Counties Field Ambulance, Royal Army Medical

Corps: Captain James S. Warrack to be Major (dated Jan. 29th, 1913).

Highland Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant Archibald C. Balfour resigns his commission (dated Jan. 25th, 1913).

6th London Field Ambulance, Royal Army Medical Corps: Lieutenant Henry K. Dawson to be Captain (dated Jan. 6th, 1913).

4th London General Hospital, Royal Army Medical Corps: Edmund Spriggs to be Captain, whose services will be available on mobilisation (dated Jan. 9th, 1913).

1st Scottish General Hospital, Royal Army Medical Corps: Lieutenant-Colonel James McKenzie Booth, retired list, Territorial Force, to be Lieutenant-Colonel, whose services will be available on mobilisation (dated Dec. 20th, 1912). John Wallace Milne to be Major, whose services will be available on mobilisation (dated Dec. 20th, 1912).

The undermentioned gentlemen to be Captains, whose services will be available on mobilisation (dated Dec. 20th, 1912): Alexander Mitchell Stalker, John Mackie Whyte, Alexander Don, Charles Kerr, Alexander Petrie Low, Arthur Wellesley Falconer, George Herbert Colt, Alexander Mitchell, Angus McGillivray, George Mellis Duncan, William Clark Souter, John Johnston, William Brown, and James Milroy McQueen.

DEATHS IN THE SERVICES.

Surgeon-Major John Milford Barnett, late of the Indian Medical Service, on Jan. 24th, at 21, Amherst-road, Bexhill-on-Sea, aged 82. He joined the Bombay Artillery in 1853, and served in 1857 as surgeon of the 26th Bombay Regiment N.I., with the Persian Expedition under Generals Outram and Havelock, being present during the forced march on Boorazjoon, the night attack and the battle of Khooshab, in which he was wounded (medal with two clasps), and at the bombardment and capture of Mohumera and forts. He served as staff-surgeon of the Kattywar Field Force against the Wagheers in 1860, was promoted to surgeon and major in 1865, and retired in 1869.

ARCHIVES DE MÉDECINE ET PHARMACIE NAVALES.

In the *Archives de Médecine et Pharmacie Navales* for November, 1912, Dr. Gloaguen, médecin de 1re classe (staff-surgeon), of the French Navy, discusses the eyesight of the quartermasters in that service, urging that only men with eyesight above normal shall be allowed to join this category. Eyesight tends to become impaired as years go on, and only men whose vision is much above normal to commence with can, as they get older and become more experienced and more valuable, escape eyetire, eyestrain, and asthenopia after the long periods of specially concentrated attention which are sometimes required of them. He quotes Fleet-Surgeon Whitelegge to reinforce his opinion that the demands made by navies on eyesight will constantly increase, and, having emphasised the risk to a ship from defect of vision in a quartermaster, he demands a higher standard of vision on entry and special repeated examinations later on. There are 25 men of this class in the French ship *Justice*, of whom 8 (one-third) had some eye trouble or other. Of 100 men in the general service, in no way selected for their good eyesight, he found 62 had vision 5/5 to 7/5, 38 had 7/5 to 10/5, so he is of opinion it would be quite easy to find, at 18 to 20 years, enough men for quartermasters with vision 7/5, but he also requires emmetropia in both eyes, absence of colour blindness and limitation of field, and normal eye apparatus. After 30 he proposes to examine these men annually, and all men after recovery from head injury, typhoid fever, &c. Men who have had malaria, syphilis, or alcoholism are to be examined every six months, as are all men after 40. He supports his views by the experience and regulations of a French railway company. Dr. Lancelin, médecin de 1re classe (staff-surgeon), describes the administrative measures taken in view of the outbreak of pneumonic plague in Manchuria in the early months of 1911 till it suddenly ceased in mid-April. He gives his greatest praise to the Japanese, who extinguished the epidemic at Dalny in 22 days. His whole paper should be read by all medical officers to see how minute and at the same time how extensive are the measures called for in such an emergency. The house in which the first case of plague developed in Dalny, on the evening of Jan. 11th, was apparently burnt down that night; next day £20 reward was offered for the report of a Chinese attacked by plague and £1 for news of a corpse. £100,000 were at once voted for sanitary measures. Traffic was made difficult. Chinese were only allowed to travel after examination of blood for B. pestis and quarantine of five days, with steam disinfection of baggage and clothing; the steam was supplied by tugs or locomotives, and refrigerator cars made excellent disinfecting chambers.

COLONIAL MEDICAL SERVICES.

West African Medical Staff.—The following have been selected for appointment to the staff: Dr. W. Telfer (Gold Coast), Dr. J. F. Corson (Gold Coast), Dr. H. Fleming (Sierra Leone), Dr. W. Allan (Sierra Leone). *Other Colonies and Protectorates:* Dr. J. L. Pawan and Dr. H. C. Swertz have been selected for appointment as Supernumerary Medical Officers in Trinidad. Mr. T. H. Massey has been selected for appointment as a Medical Officer in the East Africa Protectorate. Mr. M. Anthony has been selected for appointment as Second Assistant Medical Officer, Lunatic Asylum, Jamaica. Mr. A. H. B. Pearce, medical superintendent of the Holberton Hospital, and health officer, Antigua, has been selected for appointment as Colonial Surgeon in the Falkland Islands. Mr. J. F. Hoare has been selected for appointment as a Medical Officer, Gilbert and Ellice Islands. Mr. J. G. Watson has been selected for appointment as Medical Officer for Grand Cayman, and Mr. W. S. Mitchell, has been selected for appointment as Assistant Resident House Surgeon at the Colony Hospital, Grenada.

ROYAL ARMY MEDICAL CORPS EXAMINATION.

The War Office has issued the following list of successful candidates for commissions in the Royal Army Medical Corps at the competition held in London in January, 1913, for which 44 candidates entered:—

	Marks.
Smith, S. H., M.R.C.S. Eng., L.R.C.P. Lond., King's College Hospital	603
Cairns, F. D., M.B., Ch.B. Univ. Edin., Edinburgh University	593
Bedingfield, H., M.B., Ch.B. Univ. Edin., Edinburgh University	570
Davidson, F. C., M.B., Ch.B. Univ. Edin., Edinburgh University	559
O'Connell, J. P., M.B., B.S. Univ. Lond., L.S.A. Lond., St. Mary's Hospital	554
*Ball, W. O. W., B.A., M.B., B.Ch., B.A.O. Univ. Dublin, L.M. (Rot.), Dublin University	549
Crocket, J., M.B., Ch.B., Univ. Edin., Edinburgh University	542
Sealy, H. N., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., London Hospital	540
Rowe, J., M.B., B.Ch., B.A.O. Nat. Univ., Ireland, National University, Ireland	539
Large, S. D., L.R.C.P.S. Edin., L.F.P.S. Glasg., L.D.S. Edin., Royal College of Surgeons of Edinburgh	538
Beddows, E. C., M.R.C.S. Eng., L.R.C.P. Lond., Birmingham University	528
Dyas, G. E., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital	520
Bridges, A. B. H., M.R.C.S. Eng., L.R.C.P. Lond., St. Thomas's Hospital	515
Thornton, C. V., M.B., B.Ch., Univ. Edin., Edinburgh University	510
Helm, C., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Middlesex Hospital	505
*Croker, W. P., B.A., M.B., B.Ch., B.A.O. Univ. Dublin, L.M. (Rot.), Dublin University	498
*Brown, A. G., M.A., M.B., B.Ch. Univ. Edin., Edinburgh University	490
Warburton, P. D., M.R.C.S. Eng., L.R.C.P. Lond., Sheffield University	479
*Hemphill, R., B.A., M.B., B.Ch., B.A.O. Univ. Dublin, Dublin University	477
*Jackson, A., B.A. Oxon., M.R.C.S. Eng., L.R.C.P. Lond., St. Thomas's Hospital	476

* These gentlemen, being in possession of certificates obtained in the Officers' Training Corps, were awarded service marks under Paragraph 71 of the Regulations for the Officers' Training Corps.

INDIAN MEDICAL SERVICE EXAMINATION.

The result of the competition which was held on Jan. 20th, 21st, 22nd, 23rd, 24th, and 25th, has been announced as follows:—

	Marks.
Porter, R. R. M., M.A., M.B., Ch.B. Aberd., Aberdeen University	3707
Sweet, R., M.B., Ch.B. Glasg., Glasgow University	3489
Calvert, E., B.A. Cantab., M.R.C.S., L.R.C.P., Cambridge University and St. Bartholomew's Hospital	3320
Walsh, P. J., M.B., B.Ch., B.A.O., National University of Ireland, University College, Cork	3308
Webb, J. R. D., M.R.C.S., L.R.C.P., Liverpool University and University College Hospital	3301
Phelan, F., L.R.C.P. & S. Irel., University College, Cork	3203
Hill, A. Hilary Clifton, M.R.C.S., L.R.C.P., Middlesex Hospital	3130
Kapur, N. C., M.R.C.S., L.R.C.P., University College Hospital	3086
Holmes, J. F., M.R.C.S., L.R.C.P., Calcutta University and Charing Cross Hospital	3082
Macrae, A. C., M.B., Ch.B. Aberd., Aberdeen University	3067
Gulamhussein Haji, H. S., M.R.C.S., L.R.C.P., London Hospital	3011
Bal, N. K., L.M.S. Bombay, M.R.C.S., L.R.C.P., Bombay University and Middlesex Hospital	3008

THE MILITARY SURGEON.

The December number of the *Military Surgeon* (Washington, D.C., U.S.A.) is chiefly concerned with the great question of the removal of wounded and sick from the fighting line. The problem is considered as it has affected the armies of the United States, and as it is planned by the armies of the United States, England, France, Germany, and Russia. It is said that the Russians in Manchuria cleared the battlefields of wounded "with remarkable rapidity" by their field railways which formed a network right up to their positions at Liaoyang and Mukden. Decauville wagonettes were run in ambulance trains of 25 cars from the front to the main line of the railway, direct, that is, from the dressing stations. Ambulance dogs are suggested for the United States army, and pistols throwing star shell 150 feet are recommended as the best device for facilitating the search for the wounded at night. Wheeled litters are praised, and Major W. W. Reno, Medical Corps, U.S. Army, puts in a plea for a wheeled "travois," an improvement on an old device used by the Sioux and Dakota Indians—two poles attached in front on either side of the saddle, sloped down on each side, and behind the horse, and on them was lashed a frame whereon the wounded man was carried. Major Reno proposes to use an ordinary stretcher for carrying the wounded, having shafts fitted to a pack saddle, to them being attached the fore end of the stretcher, while the after end is held up by two small wheels about 12 inches in diameter. He found such a travois able to follow a mountain battery recently on an 844 mile march in the Rockies—at times it was quite invaluable. So, he says, it would be in action, horsed by the transport animals from the ambulances, doing nothing as they would be till their wagon was loaded, and each with a travois, and led by one bearer, they would fill the wagon more quickly than would human bearers. The horses and the stretchers are on the spot anyhow, only the shafts and wheels need to be added. The field hospitals have to be evacuated daily, and hospitals on the line of communication are required at distances of a day's travel unless there are sufficient hospital trains to carry the wounded through to the base daily. Major J. H. Ford thinks the Medical Corps requires an establishment, one-tenth of the combatants engaged. He asks for many medical officers with regiments, 2½ per 1000, and one-third of the whole Medical Corps, officers and orderlies, to be with the troops, another third with the ambulance companies, and the remainder in the field hospitals. The need for supervision by officers and non-commissioned officers of the men employed in carrying back wounded, to see that everyone works hard, and that no time is lost, is strongly put forward. In a review of the work on "Field Surgery," by Professor R. R. Wreden, of St. Petersburg, late chief surgeon of the Manchurian army, there occurs the following pronouncement: "All teachings about the increased humanity of our modern armament are lies." The losses of men have been doubled and the ratio of killed has been quadrupled. Tracheotomy and ligature of arteries are the only operations possible at the front. For shock, morphia; and splints are better than plaster bandages. Antiseptic first field dressings are preferred to aseptic. It is being discussed in the United States whether there should not be one single training school for assistant surgeons entering the navy, the army, and the public health services. With that and a joint post-graduate college, the three services would teach each other, and emulation and *esprit de corps* would make for even greater efficiency and increased output of original work.

UNIVERSITY OF LONDON: THE FRANCIS GALTON LABORATORY FOR NATIONAL EUGENICS.—A course of six lectures will be given at University College on Tuesday evenings at 8 P.M., beginning on Feb. 11th. Admission to the course is free, but by non-transferable tickets, applications for which should be made to Mr. Walter W. Seton, Secretary, at University College, Gower-street, London, W.C. The syllabus includes three lectures by Professor Karl Pearson, Galton Professor of Eugenics, and lectures by Miss E. M. Elderton, Mr. Palin Elderton, and Dr. David Heron, announcement of which will be found in the appropriate Diary of the Week.

Correspondence.

"Audi alteram partem."

THE MILK AND DAIRIES BILL.

To the Editor of THE LANCET.

SIR,—This measure, presented by Mr. Burns and ordered by the House of Commons to be printed on Dec. 10th, 1912,[1] contains three points only about which I feel that I am specially competent to speak, and these are referred to in the following remarks. 1. The danger of failure due to the inadequacy of means of efficient inspection in a large number of districts (Clause 2). 2. The absence of any statement as to the duty of farmers or other persons to notify cases of disease which, though not certainly due to tuberculosis, might on investigation by competent persons be proved to be due to that disease. These *doubtful* cases are very common, and doubt is often used as an excuse for neglect. 3. The absence of reference to the means of obtaining reliable information regarding samples of milk collected by medical officers of health or veterinary inspectors.

Past experience has shown that whenever adequate measures have been successfully applied to the control of a milk-supply, bacteriological examinations by competent bacteriologists working in suitably equipped laboratories have been essential to success. Coördination in the work of the medical officer of health, bacteriologist, and veterinary inspector has been not less essential. Neither the medical officer of health nor the veterinary inspector is (generally speaking) competent to do the bacteriological work, and, if competent, could give the time necessary to that work without neglecting his primary duties.

The following suggestions are made in order to meet these omissions. The suggestions are made in the form of addenda or corrigenda for the sake of clearness, but without any desire to indicate what the wording should be. Nor has any attempt been made to indicate all the passages which the suggested alterations would affect.

1. *Inadequacy of Means of Efficient Inspection in many Districts.*

Clause 2 (p. 2, line 35), "and in other cases to the council of the district in which the dairy is situated. ....." *Add* something to that effect "..... provided that the said council can command the services of a medical officer of health devoting the whole of his time to the duties of his office, and of a veterinary surgeon or inspector recognised for the purpose of this Act (or section) by the Board of Agriculture and the Local Government Board, and devoting the whole of his time to the duties of his office. Failing which the said council shall make such arrangements as those indicated in Clause 10 ..... with the county or county borough or other local authority commanding the services of full-time medical officer of health and veterinary inspector recognised by the Board for the purpose of this Act."

2. *Necessity of Notification of Doubtful Cases.*

Clause 12 (p. 6). Somewhere in that clause, or immediately after that clause or elsewhere, the following provisions should be made: "If a person (owner, farmer, veterinary attendant) does not notify to (the proper authority) the presence of any cow affected with some enlargement or induration of the udder or general wasting, the cause of which is not known to him to be certainly other than tuberculosis he shall be liable to a fine of ....."

3. *Recognition of Persons Competent to Conduct Bacteriological Examinations.*

The following additions or their equivalents are suggested. Memorandum (2). "The inspection of dairies." *Add*, "and the examination of cow's milk."

Clause 2 (3) (p. 3, line 13). "And separate samples thereof furnished." *Add*, "when a bacteriological examination of such samples is needed the samples shall be examined by a bacteriologist (or public health bacteriologist) and in a laboratory (recognised for the purpose by the Local Government Board)." (See definition of bacteriologist (Clause 24.)

Clause 3 (p. 3, line 22). "If on any inspection of a

[1] See THE LANCET, Dec. 21st, 1912, pp. 1735 and 1762.

dairy." *Add*, "or on receipt of a bacteriological report on the milk of a dairy." (I have some doubt as to the need of that addition.—S. D.)

Clause 3 (p. 3, line 30). "Any report furnished to him by." *Add*, "the bacteriologist."

Clause 12 (p. 7, line 12). "To take for examination." *Add*, "by a bacteriologist recognised for the purpose (or the official or public health bacteriologist)."

Clause 14 (p. 7, line 36). "For the purpose of this Act." *Add*, "a bacteriologist recognised by the L.G.B."

Clause 15 (p. 8, after line 14). *Add*, "the bacteriological examination of samples of milk.

Clause 24 (p. 13, after line 36). *Add*, "the expression, 'bacteriologist recognised for the purpose of this Act' (or official bacteriologist or public health bacteriologist means): A duly qualified practitioner, provided with adequate laboratory accommodation, and recognised by the Local Government Board as competent to carry out the investigation of milk and other products by microscopical, cultivation, inoculation, and other experimental methods, such as are used in investigations bearing upon causation and prevention of disease."

I am, Sir, yours faithfully,

S. DELÉPINE.

Public Health Laboratory, Manchester, Jan, 27th, 1913.

THE PATHOGENICITY AND VIRULENCE OF BACTERIA.

To the Editor of THE LANCET.

SIR,—In 1911 and 1912 we showed that in order to study experimental fever with any prospect of throwing light on the problems presented by immunity to bacterial disease certain technical points must be carefully attended to. We also showed that the injection experiments on the relation of fever to immunity which had before that date been published by Friedberger, Bock, Vaughan and Wheeler, and a host of other observers, including ourselves, were practically of no value owing to several fundamental errors in technique. These errors we explained in full, and showed how they were to be avoided.

In two articles by Thiele and Embleton in the *Immunitäts-forschung* for January, 1913, and in a further article which appeared in THE LANCET of Jan. 25th, 1913, pp. 234–238, a large number of similar experiments are reported, and elaborate deductions based on these experiments are brought forward. In these articles the authors have given an account of their technique, and have clearly shown in this account and in the protocols of their experiments that they have fallen victims to precisely the same fallacies that we had already exposed in our numerous published papers.

In order, therefore, to protect other workers in this field from a similar misfortune it may be well once more briefly to state the chief sources of error which misled us when we began to study experimental fever by the method of injection, and which few students of this subject have yet succeeded in escaping except as a result of a personal experience involving lamentable loss both of time and money.

The first essential in the study of experimental fever is the selection of an animal with a stable internal body temperature. In 1910 one of us undertook thermometric observations on 135 apparently healthy guinea-pigs, the animals being fed at stated intervals each day of observation. In one batch of six control animals—taken at hazard—which were examined several times a day for a week or more, the temperature charts showed such enormous fluctuations of temperature outside the daily normal range that it at once became obvious that the study of artificially induced fever in guinea-pigs was quite hopeless. These observations we have since confirmed, and an illustrative chart was published by us in 1912 which showed in graphic form that all deductions based on artificially induced fever in the guinea-pig are worthless with present methods of repeated observation. One of us also showed in 1910 that uninjected rabbits with suitable precautions give remarkably constant readings of temperature with repeated observations if healthy animals are selected. Since that time we have frequently confirmed these results in a thermometric experience of over 1500 animals. In spite, however, of these observations Friedberger and his many followers have brought forward the most elaborate deductions based on observations of temperature in the guinea-pig which they believed to be the direct and sole result of their injections.

The second essential precaution in studying injection fever is to employ as the vehicle of injection absolutely pure water. Unless this be done no experiments on fever can be relied on, as we know to our cost. It is unfortunately a very difficult matter to ensure that any given sample is pure. This is partly due to the only recently discovered facility with which air-borne organisms will multiply in water that has been even briefly exposed. It is also due to the fact, as we have repeatedly demonstrated, that filtered water that is sterile at the time of injection may be strongly pyrogenetic. The merest trace of pyrogen, even if insufficient to cause fever, will also completely mask the fall of temperature that pure water produces when injected in sufficient quantities. Even if water be collected direct from the "condenser drip" of a distilling apparatus and injected at once it may, and often does, contain sufficient pyrogen to mask the fall, as we showed in a chart published in March, 1912. The only convenient way to be sure of obtaining pure water is to distil in a glass vessel and collect from a tube that can be mechanically cleansed, and this should be done immediately before use. Water obtained in this way should be tested by injection of a healthy animal, and if a fall of temperature does not take place the water has become contaminated and must be rejected. In all the papers on the relation of fever to immunity that have so far been published by Friedberger, Bock, Thiele and Embleton and others, there is unmistakable evidence that impure water has been unconsciously employed in a large number of the experiments quoted, and this simple fact explains to a large extent the hopeless state of chaos in which the fever literature had become involved prior to its demonstration by us in 1911 and 1912.

The third essential in studying experimental fever is under no circumstances to employ the hardware filter if the filtrate is to be subsequently injected. If, for example, pure distilled water be passed through such a filter, however carefully prepared, it emerges no longer as distilled water, in consequence of the fact that it takes up calcium salts from the filter. Calcium salts are, it is agreed by all workers, depressant to temperature when injected, and filtered water, therefore, tends to mask the real effect of injecting water contaminated by the presence of pyrogen. Moreover, as we have shown, filtration is not sufficient to remove pyrogen. And, of course, all filtration experiments increase the risk of fresh infection from the air. No deductions, therefore, can be safely drawn after filtration of water that before filtration may have been beyond reproach.

Such, then, are some of the pitfalls that beset the path of the student of experimental fever and its relation to immunity, though there are numerous others, as a glance at the papers referred to below will show.[1]

We are, Sir, yours faithfully,

E. C. HORT,
W. J. PENFOLD.

The Lister Institute, Jan. 24th, 1913.

[1] Kottmann: Bestimmung der Blutmenge b. Menschen u. Tier, Arch. Exp. Pathol. u. Pharmak., 1906, vol. liv., p. 375. Schaps: Salz u. Zucker Injektion b. Säuglin., Berl. Klin. Woch., 1907, No. 19. Bergmann, E.: Ueber das durch Fäulniss u. Entzündproducte erzeugte Fieber, Petersburg Med. Zeitsch., 1868, p. 16. Wechselmann: Neuere Erfahrungen uber intrav. Salvarsan-Injektion ohne Reactions-Erscheinungen, Münch. Med. Woch., July 11th, 1911, u. April, 1911, p. 1510. Sahli: Ueber Auswaschung d. Menschlichen Organism. u. über d. Werth u. die Methoden d. Wasserzufuhr in Krank., Corresp. Bl. d. Schweiz. Aerzte, 1890, Jg. xx., 9, 545. Hutinel: Les effets des Injections sous-cutanées chez les Enfants Tuberculeux, Semaine médicale, 1895, p. 117. Wiener: Die Injektionstherapie der Neuralgien mit Berücksichtigung des Kochsalzfiebers. Münch. Med. Woch., 1910, p. 437. Bingel: Ueber Salz- u. Zucker-fieber, Arch. Exp. Path. u. Pharm., 1911, vol. lxiv., p. 1. Freund, H., and Graefe, E.: Stoffwechseluntersuchungen b. Exp. Kochsalzfieber, Arch. Exp. Path. u. Pharmak., December, 1911, p. 55. Mollhausen: Salz- u. Zuckerinfusionen b. Säugling., Jahrbuch f. Kinderheil, 1907, vol. lxv., p. 516. Freund: Kochsalzfieber, Arch. Exp. Path. u. Pharmak., 1911, vol. lxv., p. 225. Davidsohn and Friedemann: Untersuchungen über das Salzfieber bei normalen u. anaphylactischen Kaninchen, Arch. f. Hygiene, 1909, vol. lxxi., p. 9. Finkelstein: Ueber Aliment Fieber, Deutsch. Med. Woch., 1909, p. 191. Voit: Untersuchungen über das Verhalten verschiedener Zuckerarten im Menschlichen Organism. nach subcut. Injection, Deutsch. Arch. klin. Med., 1897, vol. lviii., p. 523. Edelberg: Arch. Exp. Pathol. u. Pharmak., vol. xii. Mendelsohn: Ueber d. Function. d. Niere im Fieber, Virch. Archiv., 1885, vol. c., p. 274. Hildebrand: Zur Kentniss d. physiol. Wirkung der hydrolytischen Fermente, Virch. Archiv, 1890, vol. cxxi., p. 1. Hildebrand: Ueber einige pyretische Versuch., Virch. Archiv, 1893, vol. cxxxi., p. 3. Bergmann and Angerer: Würzburger Festschrift. Hammerschlag: Ueber die Beziehung d. Fibrinfermentes zur Entstehung des Fiebers, Arch. Exp. Path. u. Pharmak., 1891, vol. xxvii., p. 1.

CERVICAL RIB.

To the Editor of THE LANCET.

SIR,—On Feb. 14th the meeting of the Clinical Section of the Royal Society of Medicine will be devoted largely to the subject of cervical rib, particularly the results of operative treatment. We should like very much to have (1) cases showing the results of the removal of the rib; (2) cases showing neuro-muscular features; (3) cases with vascular features. Gentlemen wishing to show cases please communicate with the secretaries—Chas. H. Fagge, M.S., 3, Devonshire-place, W.; W. Essex Wynter, M.D., 27, Wimpole-street, W. I am, Sir, yours faithfully,

Oxford, Jan. 28th, 1913. WM. OSLER.

THE PROBLEM OF SPONTANEOUS GENERATION.

To the Editor of THE LANCET.

SIR,—In an annotation entitled as above you refer in THE LANCET of Jan. 25th to Dr. H. Grasset's learned work entitled "A Historical and Critical Study on Spontaneous Generations and Heterogeny," in which he gives a valuable and detailed history of this much controverted subject, including especially a very full account of all the discussions that took place in France between Pasteur and those who opposed his views in the French Academy and elsewhere from 1858 to 1880.

Dr. Grasset shows that in several respects Pasteur had obtained the credit of views first enunciated by Béchamp, and he himself became so much enamoured with the views of Béchamp concerning *microzymas* that in 1910–11 he published a series of articles in *La France Médicale*, entitled "L'Œuvre de Béchamp" (subsequently republished in book form), in which he strongly supported Béchamp's vague doctrines concerning cell granules which were to be styled microzymas—though no criterion was even given as to how these particular granules were to be distinguished from other granules contained within a cell. These supposed microzymas were even said to be found living in chalk and capable of resisting marvellously prolonged and high temperatures. Thus in the second edition of this book, at p. 28, Grasset quotes from Béchamp the following passage:—

"La craie sortant de la carrière contient donc les organismes actuellement vivants, adultes et sans doute très vieux. Ils peuvent être tués; il suffit pour cela de maintenir la craie à une chaleur humide soutenue à 150 ou 200 degrés C. pendant plusieurs heures."

It may fairly be said that very few persons share Dr. Grasset's notions as to the value of Béchamp's doctrines concerning microzymas and their properties. It was after having made himself the champion of Béchamp, and before he had read any of my most important work concerning archebiosis, that Dr. Grasset published in *La France Médicale* another series of articles, which have since been republished as the book to which your annotation refers. In these articles he gave a full and very appreciative account of my work up to the date of 1906, but there was even no mention in them of my book, "The Origin of Life," published in 1911. On my pointing out to him how strange this would seem for an authoritative work purporting to give a history of the subject up to the end of 1912, Dr. Grasset was induced to add two pages in the form of an appendix in which he states his opinion as to the interpretation to be attached to my experiments. He cannot assent to my view that they go to prove the reality of archebiosis, though he believes, as you say, that I have "obtained living beings which are unable to resist the heat to which he subjected the solutions employed; and further, that he has made no error in technique, so that external infection is out of the question."

In short, what I regard as archebiosis Dr. Grasset looks upon as heterogenesis—because he thinks that my solutions, or any other solutions, would have contained some of these mysterious microzymas such as Béchamp believed he found living in chalk and capable of resisting prolonged very high temperatures.

Why in all the death-point experiments that have been made in this and other countries by so many experimenters, which have shown that torulæ are killed invariably at, or a little above, 60° C. for a minute or two, there has never subsequently been a resurrection of such torulæ, due to the survival of imaginary microzymas, Dr. Grasset's views give no sort of explanation.—I am, Sir, yours faithfully,

H. CHARLTON BASTIAN.

The Athenæum, S.W., Jan. 27th, 1913.

Freund, H.: Studien über d. Fieber d. Blutz. u. Transf., Deutsch. Arch. Klin. Med., December, 1911, vol. cv., p. 45. Schultz: Ueber Transf. b. Mensch. u. Berück. biol. Vorp., Berl. Klin. Woch., 1910, p. 1407. Sirotinin (1886): Die Uebertragung von Typhusbacillen auf Versuchsthiere, Zeit. f. Hygiene, Bd. I, p. 465. Bouchard, cit nach Rouguès: Substances thermogènes. Krehl und Mathes (1896): Versuch ueber Erzeugung von Fieber bei Thieren, Arch. f. exp. Path. und Pharmac., Bd. xxxv., p. 222. Schittenhelm, Weichardt und Hartmann (1912): Eiweiss Umsatz und ueber-empfindlichkeit, Zeit. f. exp. Path. und Therapie, vol. x., H. 3, p. 448. Friedberger und Mita: Ueber Anaphylaxie, Zeit. f. Immunitätsfors. und exp. Therapie, I Theil, Originale, vol. x., 1911, p. 216. Vaughan, V. C., Cumming, J. G., and Wright, J. H.: Protein Fever, Zeitsch. f. Immunitätsforsch. und experimentelle Therapie, Pt. 1, Orig. ix., 458. Vaughan, Wheeler and Gidley (1909): Protein Fever, Journal of the American Medical Association. Friedberger, E., und Mita, S. (1911): Ueber Anaphylaxie, die Anaphylaktische Fieberreaktion, Zeit. f. Immun., Pt. 1, 216. Schittenhelm, A., Weichardt, W., und Hartmann, F. (1912): Ueber die Beeinflussung der Körpertemperatur durch parenterale Einverleitung von Proteinsubstanzen verschiedenes Herkunft, Zeit. f. exp. Path. und Ther., x. 448. Friedberger, E.: Anaphylaktische Fieber, Berlin klin. Woch. (1910), No. 42. Hort: Autotoxæmia and Infection, Proc. Roy. Soc., B., vol. lxxxii., 1910; Vaccines and Fever, Brit. Med. Jour., January, 1913 (in press); The Causes of Fever, lecture to Med. Grad. Polyclinic, Med. Press and Circular, Nov., 1912; The Relationship of Fever to Vaccines, Journal of Vaccine Therapy, Feb. 7th, 1913 (in press). Hort and Penfold: A Critical Study of Experimental Fever, Proc. Roy. Soc., B., vol. lxxxv., 1912; Further Studies in Experimental Fever, Proc. Roy. Soc. Med., 1912, vol. vi. (Path. Sect.), pp. 76–84; The Dangers of Saline Injections, Brit. Med. Jour., 1911, ii., p. 1510; The Relation of Salvarsan Fever to other Forms of Injection Fever, Proc. Roy. Soc. Med., 1912, vol. v. (Path. Sect.), pp. 131–139; A Study of the Pyrogenetic Properties of B. Typhosus, Brit. Med. Jour., Nov. 9th, 1912.

RESEARCH DEFENCE SOCIETY.

To the Editor of THE LANCET.

SIR,—It is said that the fifth year in the life of any society is the critical period of its fortunes. The Research Defence Society was founded on Jan. 27th, 1908. To all who are interested—and who is not?—in medical research, we beg you to let us say that the society has its hands full of work, and only wants more money to do more work. Much has already been done by lectures and by distribution of literature to bring home to people the truth about experiments on animals in this country, and the great value of them, not only to mankind, but also to the animal world. The expenses of our society are heavy, but the good results of our work are extended far and wide. We have lately opened a bureau and exhibition at 171, Piccadilly (opposite Burlington House). We are exhibiting pictures, portraits, charts, anæsthetics and inhalers, germs in pure culture, tse-tse flies, mosquitoes, and so forth. This little exhibition, every day and all day long, displays to "the man in the street" the facts of the case. We are the only society which is doing work of this kind, but, of course, it cannot be done without money. Our record for the last four years gives us the right to hope for a great increase of our membership and of our funds in the coming year.

We remain, your obedient servants,

DAVID GILL, President.
F. M. SANDWITH, Honorary Treasurer.
STEPHEN PAGET, Honorary Secretary.

21, Ladbroke-square, W., Jan. 24th, 1913.

ARTIFICIAL RESPIRATION.

To the Editor of THE LANCET.

SIR,—A correspondent with whom I was discussing the mouth-to-mouth method of performing artificial respiration has drawn my attention to the following passage in 2 Kings iv. 34, which seems to show that Elisha used this method:—

"And he went up, and lay upon the child, and put his mouth upon his mouth, and his eyes upon his eyes, and his hands upon his hands: and he stretched himself upon the child; and the flesh of the child waxed warm." "Then he returned, and walked in the house to and fro, and went up, and stretched himself upon him: and the child sneezed seven times, and the child opened his eyes."

Attention may have been drawn before to this remarkable passage, but if so, why is not this, the best method of

restoring a child, called Elisha's method of artificial respiration? I am, Sir, yours faithfully,

Loughton, Essex, Jan. 25th, 1913. LEONARD HILL.

THE ASSOCIATION OF BAD TEETH AND LEAD POISONING.

To the Editor of THE LANCET.

SIR,—The interesting annotation on the subject of lead poisoning which appears in THE LANCET of Jan. 18th, p. 183, makes me think that perhaps the following notes which I have made on the subject in my capacity of appointed surgeon under the Factory Acts, may be of interest to your readers.

In lead and spelter works there are a large number of men who have what is usually termed a lead or saturnine appearance, as well as certain signs and symptoms that are supposed to be characteristic of lead. The tongue is oftentimes pale, flabby, and tooth-indented. The man suffers from constipation or a tendency thereto; he complains of malaise and an indisposition to work, and a general expression of discomfort. These symptoms, together with a certain amount of pain due to gastric distension, if found in a man working in lead or spelter works, are sure to lead to a certificate notifying lead poisoning. But a reference to any text-book will show that the above symptoms, which I have taken almost seriatim from Taylor's book on medicine, are those under the heading of gastric indigestion. In all the men at the works who present the above symptoms I have found that the teeth are in a very bad condition and the mouth extremely foul. Were I to use my powers of suspension from work I might easily disorganise the works, for such a large number would have to be suspended.

My plan, however, is to draw the man's attention to the foulness of his mouth and the consequences that arise therefrom, with the result that many of them have had their teeth extracted and all need for suspension has disappeared, the men presenting an appearance of sound health at the end of two to three months, the colour reappearing in their cheeks, their malaise lessened, their tongue clean, and all stomachic discomfort removed. When the men have dirty mouths they do not seem to mind what extra amount of dirt they put into their mouths, for without hesitation they put their lead-dusted fingers in to pick their teeth and smoke cigarettes down to the fag-end, which is always thickly coated with lead. Now that lavatories and mess-rooms are provided, they do take more care about washing their hands before eating, but this is due to the fact that they are driven there by the management as well as the cosy comfort of the rooms themselves. When, however, a man has been to the dentist and had his teeth removed, it is always noticeable that he is more particular as to what he puts in his mouth, and an improved moral force gives evidence of its presence.

In connexion with lead poisoning there are two questions that require an answer: the first is, Why are there more cases in hot summers? and the second, Why do healthy young men fresh from the country show evidence of lead poisoning in a very short time after starting in the lead works? The answer to the first is to be found in the fact that men with foul teeth are always in, or bordering on, a state of dyspepsia, for the filthy material from the teeth acts as a poison to the gastric mucous membrane, with the result that this membrane is extremely likely to become inflamed and its blood-vessels considerably dilated, especially when the fruit is cheap and large quantities of it are eaten in an unripe condition. With this engorgement it is easy to understand how the lead, instead of being adsorbed, becomes absorbed and the system poisoned.

With regard to the oftentimes quick appearance of lead symptoms in healthy fresh men from the country, the explanation is easy, for with foul mouths and a gluttonous appetite for food hitherto unattainable on account of their low wages, they develop an attack of gastritis which causes lead absorption and the typical symptoms more or less masked by those of gastritis. In the case of the fresh men it cannot be due to the fact that they inhale more than the other men who have developed somewhat of an immunity against lead poisoning, for no such immunity exists or has even been suggested. Were inhalation the chief cause of lead absorption one would naturally expect to find lead poisoning amongst some of the foremen and managers, but these on account of their cleanly habits are saved. Nor can it be held in connexion with hot summers that the dust about the works is increased, for before furnaces there is always dust, and during the storms of winter this dust is much more likely to be blown about.

The point is one of very great importance, especially when treatment is considered, for if the cause lie in the preliminary gastritis it is important to note that iodides are contra-indicated, since the more soluble lead salt that is formed has a greater chance of being absorbed. What, then, should be our method of dealing with these cases? The best method seems to me undoubtedly to give such drugs as tend to allay or remove the gastritic condition, and the best drug for these cases is, I think, calcium permanganate.

I am, Sir, yours faithfully,

Swansea, Jan. 24th, 1913. G. ARBOUR STEPHENS.

HOSPITAL NURSING IN ITALY.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Dec. 7th, 1912, p. 1619, your Italian correspondent comments very severely on hospital nursing in Italy. Incidentally he mentions the "Regina Elena," concerning which I should like permission to furnish some details.

The Scuola Convitto Regina Elena (Nurses' Home) now contains 75 bedrooms, eight sisters' and nurses' sitting-rooms, dining-room, matron's offices, servants' quarters, and laundry. At first the nursing of 80 patients was given in charge of an English matron and sisters. The school then consisted of 18 to 20 nurses, matron and assistant matron, coming out from England, and of 16 Italian probationers who came from all parts of Italy. To-day the staff consists of matron, 14 English sisters, including home sister, massage sister, night superintendent, 17 certificated Italian nurses, and 35 Italian probationers (in all 67). The patients nursed by them now number 240. Many applications for admission as probationers are under consideration, and a site is being chosen for the building of a new nurses' home with 400 to 450 beds, so as to make it possible to take over the entire nursing of the 1200 to 1350 Policlinico patients. H.M. the Queen of Italy will next month present medals to Italy's first 17 hospital-trained nurses, nurses trained on Florence Nightingale lines—that is, not mainly (or even exclusively) by lectures, but by the bedside of a sufficient number of the patients, for whose sake we believe that all hospitals, doctors, and nurses exist.

I am, Sir, yours faithfully,

Rome, Jan. 18th, 1913. D. A. SNELL (Matron).

THE STATISTICS OF MORBIDITY AND MORTALITY.

To the Editor of THE LANCET.

SIR,—The Royal Statistical Society has appointed a committee to report on the statistics of morbidity and mortality in the United Kingdom which are available. Doubtless there are many valuable collections published in various parts of the country by hospitals and institutions which are not known to the society. May I invite the authorities of such institutions to communicate with me about any collected data, published or otherwise, which they may have by them?—I am, Sir, yours faithfully,

REGINALD DUDFIELD,
Chairman of the Committee.

Royal Statistical Society, 9, Adelphi-terrace, Strand, London, W.C., Jan. 28th, 1913.

DONATIONS AND BEQUESTS.—The late Mrs. Sarah Annie Ward, of York, has bequeathed £4000 to the Cancer Hospital at Brompton, and £150 to the Men's Convalescent Home, Rhyl.—Mr. Mark Kippax, of Blackpool, retired cotton manufacturer, left net personalty £24,422. Subject to one life interest he bequeathed £1000 each to the Victoria Hospital for Burnley and District and to the Victoria Hospital, Blackpool.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester School Children: Excessive Work out of School Hours: Visits to Picture Palaces.

Mr. Robert Henderson, president of the Manchester Certified Class Teachers' Association, on Jan. 24th gave some remarkable statistics as to the hours worked by Manchester school children out of school time and as to their attendances at picture palaces. One of the great obstacles to education undoubtedly is the eagerness of the working classes to get their children to work at the earliest possible moment, and it is also unfortunate that at present provision is made for children to leave school at a much earlier age than 14. The number of children allowed to complete at school their fourteenth year was very small indeed. Quite 50 per cent. of the children never reach Standard VII., and the number who remained at school a full year in that standard was not more than 10 per cent. In the opinion of the president no real progress could be made until the labour examination and all exemptions from attendance at school before the age of 14 were abolished. Of lads in Standard VII., 42 per cent. were engaged in some kind of work during the day from 6 to 40 hours a week; in Standard VI., 20 per cent. worked from 5 to 36 hours a week; in Standard V., 20 per cent. worked from 7 to 38 hours; and in Standard IV., 10 per cent. worked from 14 to 33 hours. The rate of pay was miserably small, 2*s.* for 40 hours a week, 3*s.* for 35 hours, 2*s.* 6*d.* for 37 hours, and 2*s.* for 35 hours being examples. Many of these children began their work early in the morning, and some put in a couple of hours before school time. Inquiry as to the cause of absence from school disclosed the fact that of 391 boys 66 per cent. visited a cinematograph show once in a week, 27 per cent. twice, and 5 per cent. three times.

Mr. L. Harcourt on Old Age Pensions.

The Secretary for the Colonies, speaking in his constituency at Rawtenstall, stated that in Lancashire the number of pensions had increased from 60,000 in March, 1911, to over 63,000 at the present time, which was equal to 12½ pensions in every 1000 of the population, or 600 out of every 1000 persons over 70 years of age. Since the Act came into force the number of paupers receiving Poor-law relief had fallen from 15,700 to 5200. Of the former 6000 were in-door paupers. To-day the number was 4700, a reduction of 22 per cent. Out-door paupers had decreased from 9600 to 500, a reduction of 94 per cent.

The Noxious Qualities of Manchester Smoke.

A new effort is being made to remove, or at least lessen, the evils of dust and smoke in Manchester by setting up an air pollution advisory board. It appears that Manchester smoke is richer in noxious products than the smoke of most cities. Indeed, it is stated that Kent hop growers pay a handsome price for Manchester soot. Manchester, besides using more coal than most places, uses a "fat coal," a coal which yields an abnormally large proportion of smoke and soot. To this fact Dr. Knecht, of the School of Technology, ascribes the "vitiated condition of the atmosphere in which we exist, with its attendant evil effects on the breathing organs, the desolate look of plots of land in and near the city, the dirtiness of all outdoor objects, the enormous amount of work involved in house-cleaning, and the inconvenience caused by black fogs." Dr. Knecht scraped the surface snow off a square of Whitworth-street and made an analysis of the "mixture," with the following result:—

Ammonium sulphate	10·7 per cent.
Mineral matter (ash)	19·6 ,,
Acid constituents	10·9 ,,
Benzine extract (hydrocarbons)	13·0 ,,
Difference (probably carbon)	45·8 ,,

A Year's Street Accidents.

The return made by the Royal Infirmary of street accidents during the past year shows a total of 1634 out-patients and 217 in-patients at the infirmary and the central branch. This does not include street accidents attended to at other hospitals. Of the in-patients, 60 were due to falls in the street. Of 76 persons knocked down, 30, or about a half, were of individuals run down by taxi-cabs, 14 by private motors, 2 by motor cycles, 4 by cycles, 15 by lorries and carts, 8 by tramcars, and 1 each by a horse, a pedestrian, and a dog. Of the out-patients, 614 out of 647 cases treated were due to falls in the streets, and similar causes were responsible for 298 out of 498 cases treated at the central branch. The dangers of street traffic were further shown by the fact that 26 people were knocked down by taxi-cabs, 19 by private cars, 2 by cycles, while of 321 who received treatment at the central branch 70 were knocked down by taxi-cabs, 53 by private cars, 31 by cycles, 60 by tramcars, and 106 by lorries and other vehicles. Altogether, 78 persons were bitten by dogs and 6 by horses.

Enteric Fever at Colne.

An outbreak of enteric fever has occurred at Colne, in Lancashire, and 50 cases have been reported to the authorities. There have been several deaths during the epidemic, which began over three weeks ago. The cases have been accommodated at the Jerusalem Hospital, which was erected near the town during the outbreak of small-pox some years ago.

Jan. 27th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

David Lewis Northern Hospital.

THE annual meeting of the trustees of the David Lewis Northern Hospital was held at the Town-hall on Jan. 24th, the Lord Mayor presiding. It appeared from the seventy-ninth annual report that the number of in-patients treated during the year 1912 was 2500. 18,932 persons were treated as out-patients, involving 41,249 attendances. In addition, 71 persons attended for treatment in the electrical department, while 264 patients were treated in the department for othopædics and massage, involving 1491 attendances. The ambulance was called for on 899 occasions. The expenditure was £12,646 and the income £12,744. The debit balance on account was now £5184. The committee had to announce with regret the resignation of Mr. H. Wade Deacon of the chairmanship of the committee, he having accepted the chairmanship of the Royal Infirmary. The Lord Mayor, in commenting on the necessity for the charitable to continue to subscribe liberally to the funds of the hospital in spite of the National Insurance Act, said that most of the patients were accident cases from the docks, and were quite outside the provisions of the Act. He thought some better system might be devised with regard to the hospital collections whereby the contributions of both employers and employed might be increased. He moved the adoption of the report. Colonel Hall Walker, M.P., in seconding, hoped that all misunderstanding with regard to the Insurance Act might be cleared up. The public ought to know that there was a great distinction between illness and accident. At the hospital they had a large number of out-patients to whom the Insurance Act gave no relief. In all hose cases prompt treatment was essential. Mr. Wade Deacon proposed the re-election of the honorary staff and the committee, and said the point to impress upon everybody was that there was no provision in the Insurance Act for anything except domiciliary treatment of patients. It was not the duty of hospitals to provide for cases of that kind. Once that was understood, there was no reason why people should discontinue their subscriptions. Such subscriptions were voluntary gifts from workers and employers to voluntary hospitals and they carried with them no rights. And it was in order to maintain that voluntary system their gifts were intended. The honorary treasurer, in submitting the accounts, said he was glad to say that he had only received three protests from people withholding their subscriptions owing to the Insurance Act. He hoped to win them over. The retirement of Mr. Damer Harrisson from the post of honorary surgeon to the hospital was announced, when graceful allusions were made to his long and valued services.

The Late Dr. Owen T. Williams.

At a meeting of the committee of the Royal Infirmary held on Jan. 23rd the following resolution was passed:—

That the committee desires to place on record its deep regret on the death of Dr. Owen T. Williams, an honorary assistant physician since

1910, and to express its high appreciation of the valuable services he has rendered to the infirmary.

A sincere expression of sympathy with Miss Williams in her bereavement was also carried.

Royal Southern Hospital.

At a meeting of the election committee held last week Dr. Arthur J. Wallace, honorary surgeon to the Hospital for Women, Shaw-street, was appointed honorary consulting gynæcologist, and Mr. Herbert Williams was appointed an honorary assistant surgeon.

Jan. 28th.

BRISTOL AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Presentation to Dr. R. Shingleton Smith.

BETWEEN 40 and 50 members of the medical profession assembled at dinner on Jan. 18th at Fortt's, to assist at a presentation to Dr. R. Shingleton Smith from the Bristol Medico-Chirurgical Society, which Dr. Smith helped to found. The chairman was Professor Walter C. Swayne, president of the society. While Dr. Smith's successful 21 years' editorship of the *Bristol Medico-Chirurgical Journal* was the chief occasion, he has been associated with so many projects and accomplishments on behalf of the medical profession and its work that Mr. Nelson C. Dobson, who made the presentation, and Mr. F. Richardson Cross, who supported him, found it difficult to enumerate the whole category. The presents were a fine seascape in oil, a silver salver, and an album containing the names of the subscribers. Dr. Smith returned thanks in very modest terms. The evening concluded with a smoking concert, one of the most attractive items being a series of lantern slides shown by Mr. G. Munro Smith, entitled on the programme, "Morbid Entities"; these proved to be portraits of his colleagues, which he adorned with descriptive verse.

Retirement of Mr. J. Paul Bush, C.M.G.

For Bristol medical men it is hard to realise that Mr. J. Paul Bush has retired from the active staff of the Royal Infirmary under the age-limit clause. For many years he has been a pillar of the institution, and as much a feature of the place as the family has been of Bristol itself—the first Bishop of Bristol was a Paul Bush.

Death of Mr. J. W. Arrowsmith.

Mr. Arrowsmith's death at the age of 74 removes a familiar figure from the council of the University of Bristol. Among the various movements that claimed a share of his notable energies, that which has led to the formation and further development of the University of Bristol, was as near to his affections as any. The University Colston Society, which was founded to raise funds for, and to increase interest in, the formation of the University, owed its existence largely to Mr. Arrowsmith, and since the granting of the charter, the society's funds having been devoted to the support of research, he was directly concerned with the expenditure of these sums in the prosecution of scientific investigation. In 1911 the tower of the new building was named the "Arrowsmith tower," and in 1912 his workpeople placed a bronze tablet in the entrance hall beneath the tower, by leave of the council, to commemorate his achievements on behalf of university education.

Hospital Sunday in Bristol.

Jan. 26th was Hospital Sunday in Bristol. Notwithstanding the uncertainty which prevails as to the position of the hospitals in regard to the National Insurance Act, there appears to have been little slackening in the interest of the public in the support of these institutions. The Lord Mayor himself and many of Sunday's preachers took pains to point out the necessity for continuing subscriptions to institutions for the treatment of serious disease.

Health of Bristol in 1912.

Dr. D. S. Davies, the medical officer of health of Bristol, states that during 1912 the general death-rate (uncorrected) was 12·6 as compared with 15·4 for 1911, and with a ten years' average of 14·3. The zymotic mortality from seven chief epidemic diseases was 0·9, as against 2·2 in 1911. The infantile mortality was 103, compared with 142 in the previous year.

Bristol Tuberculosis Dispensaries.

The Bristol Health Committee is hoping to have two tuberculosis dispensaries, one of which will be new, while the Redcliffe Dispensary for the Prevention of Consumption, which has already been at work for a year on voluntary lines, will constitute the other. The committee of the latter is arranging for its transfer to the municipal authorities, and the surplus funds will be devoted to some other part of the crusade against tuberculosis.

The National Insurance Act at Work in Bristol.

Medical men on the Bristol panel will look back at the inauguration of the insurance service with thankfulness in one respect, that it never can happen again. Hours of clerical work, with handling of unfamiliar prescription forms and cumbrous ledgers, added to the ordinary tasks of the day, have not so far prejudiced them in favour of the Act. The Joint Committee, consisting equally of medical men and of representatives of the Insurance Committee, has been appointed, and has indeed met already; it will have the task of administering medical benefit. Meantime the Medical Federation, Limited, a local organisation of considerable energy, is endeavouring to float a service for the non-insured in conjunction with the local division of the Oddfellows' Society. Medical service is guaranteed by the Federation in return for capitation payments by the Society on an agreed scale; administration to rest in the hands of laymen and practitioners equally represented on the governing bodies.

Hospital Sunday Fund at Plymouth.

As a result of the recent Hospital Sunday collections in Plymouth the sum of £792 has been handed to the treasurer of the South Devon and East Cornwall Hospital.

The Health of Cornwall in 1912.

The medical officer of health for Cornwall, Dr. R. Burnet, reports that the death-rate for 1912 was 13·75, as against 15·40 in 1911. Deaths of infants under one year per 1000 births 82·18, as against 129·68. The birth-rate was 19·98, as compared with 20·39 in 1911.

Jan. 28th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Insanitary Condition of a Carnarvonshire Village.

IN his last annual report Dr. E. Ll. Parry-Edwards, the medical officer of health of one of the Carnarvonshire combined sanitary districts, referred to the lack of proper sewerage schemes and the inefficient water-supply of the Gwyrfai rural district, and he said that in some parts of that district the housing accommodation was in a deplorable condition and that there was an insufficiency of houses for the inhabitants. When reporting more recently on the village of Ebenezer, about seven miles from Carnarvon, he asserted that the water-supply and system of drainage were a serious menace to the health of the district, and that the housing conditions had been getting worse in the past few years owing to the closing of the worst houses, thus increasing the number of persons in those remaining, and converting empty houses into refuse receptacles. The most disquieting portion of his report, however, was that in which he stated that after five years' observation he had found that the school children of Ebenezer were far below the county average in physique, bearing, and general upbringing, and that the sanitary condition of the village was in no small degree responsible for this. He stated, further, that one child in every three was below the average weight, and that there were many children suffering from various diseases due to tuberculosis. Were it not, he said, for the fact that the village was situated on the side of a mountain where there was plenty of fresh air there would be continual outbreaks of disease.

The Treatment of Pauper Consumptives.

For several years past the boards of guardians of some of the largest unions in South Wales have made special arrangements for the treatment of consumptive patients under their

care, and it has been thought therefore that the experience thus gained should be available in the administration of the funds of the Welsh National Memorial and of those at the disposal of the Insurance Commissioners. A deputation from the various boards in South Wales and Monmouthshire, which recently waited on the Welsh Insurance Commissioners, pointed out that although as a counsel of perfection all Poor-law cases should be treated through the National Memorial Association, this course would not be practicable for some time, and that even if there were no overlapping in the actual treatment the guardians would be concerned with the care of the destitute dependents of consumptive patients, so that it was advisable to have the Poor-law authorities represented on the central committee administering the funds. A further step was taken at a conference of Welsh Poor-law unions held at Llandrindod on Jan. 24th, when it was decided to ask for a grant to be given to the Poor-law authorities from the sanatorium benefit funds until the National Memorial Association could take over the treatment of all phthisical cases, whether paupers or not.

Scheme for Medical Attendance in Merthyr.

Contract medical practice among the South Wales colliers, unlike that in many other industrial centres, has always included attendance upon the wives and families of the colliers, and whatever arrangements were come to under the Insurance Act it was deemed desirable to continue this custom. In some districts it has been decided to reduce the poundage of 3*d.*, which has hitherto been deducted from the men's wages, to 2*d.*, for which sum the dependents of the men would receive medical attendance. In the Merthyr district, where the poundage has been 2*d.*, a scheme has been drawn up and agreed to by the workmen which involves the continuance of the existing deduction of 2*d.* in the £ and the payment to the doctors by the workmen's medical committee of an agreed sum for attendance on the families of the men. Where a workman has no dependents the deductions will be placed in a fund to supplement the sickness benefit to which he is entitled under the Insurance Act. It is suggested that the scheme should be tried for 12 months and then altered or modified as experience may show to be necessary.

Shooting of a Tenby Medical Practitioner.

Dr. Charles D. Mathias, of Tenby, has recently gone through an experience to which members of the medical profession have not been specially liable in this country, although the number of cases is not negligible. A man presented himself at the house of Dr. Mathias and shot him in the leg, inflicting sufficient injury to keep him from his professional work for about six weeks. The man was brought before the borough magistrates and he told a rambling story of having been improperly operated on by Dr. Mathias, who denied all knowledge of any operation. At the recent Pembrokeshire assizes the medical officer of the prison stated that the man was suffering from delusions and was not fit to plead. Dr. Mathias is to be congratulated on his happy escape from consequences which might have been much more tragic.

Jan. 28th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act in Kincardineshire and Aberdeen.

AT a meeting of the medical practitioners on the panel for the county of Aberdeen, held on Jan. 25th, complaints were made from various areas as to the inadequacy of the steps taken by the Insurance Committee to make the names of the doctors on the county panels known and to provide a proper line of application forms to the different districts. It was decided to make a strong representation regarding these matters to the Insurance Committee, and also that the time of choice of doctors should be extended to Feb. 15th, as had been done in Kincardineshire. The meeting was unanimous in agreeing that all uninsured club members should only be attended at Insurance Act rate—namely, 7*s. per capita*, and this only within a radius of three miles; also that insured persons over 65 years of age be accepted at the same rate.

Turner Memorial Hospital, Keith.

The report for the Turner Memorial Hospital, Keith, shows that during the year 1912 67 cases were admitted, as against 117 in 1911, which, with 17 remaining in the hospital from the previous year, made a total of 84 cases, of which 76 recovered, 2 improved, 5 died, and 1 remained in hospital at the end of the year. Donations and subscriptions for the year amounted to £20 16*s.* 3*d.*, collections from contributing parishes were £110 11*s.*, the balance of revenue was £359 13*s.* 3*d.*, and the capital account stood at £8907 4*s.* 6*d.*

Deaths from Pneumonia in Aberdeen.

Dr. Matthew Hay, medical officer of health of the city of Aberdeen, in his report to the town council for December, says:—An investigation of the excessive number of deaths from pneumonia during the preceding month among infants under 2 years has been carried out. There were in all 23 such deaths, excluding 3 in which the disease had apparently arisen directly from whooping-cough. As regards breast-feeding, 16 of the children were breast-fed, 4 were hand- or bottle-fed, and 3 had been partly breast- and partly hand-fed. As compared with the usual proportions for the different methods of feeding among infants in the city, the proportion of breast-feeding among the affected children was somewhat under, but not much under, such proportion. In respect of size of house, the deaths were chiefly in houses of three rooms and under, but the proportion was not much beyond that for births in such houses, as compared with the total births in the city. There was no overcrowding in the houses, the average number of inmates for each size of house being nearly the same as given in the recent census for all houses of corresponding size, after deducting such houses as contained only one inmate or two inmates, these being houses in which there are, as a rule, no children. Lack of cleanliness seems to have had a closer association than overcrowding with the causes of death. The investigations of infantile mortality carried out in the years 1907 and 1908 showed that the usual proportion of houses with defective cleanliness was not greater than 5 to 6 per cent. Among houses in which the deaths from pneumonia recently occurred the proportion of dirty houses amounted to about 30 per cent. In rather less than one-half of the houses was the state of cleanliness quite satisfactory. In no case was the pneumonia traceable to any previous case of the disease in the family, or in any related family, although in one instance it was stated that one of the children had suffered from pneumonia during the preceding winter. No definite cause for the disease could, as a rule, be given by the parents. In two cases a chill was mentioned, in one chicken-pox, and in two cases the infant was said to have been not well for some months and to be liable to recurrent colds. As regards weather, which is often associated with the occurrence of an excess of pneumonia, and especially of bronchitis, both October and November were somewhat colder than usual and less sunny, and, as it may be remembered, November was exceptionally wet.

Jan. 28th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Sanatorium Benefit in Ireland.

NOT convinced by the muddle the Dublin Corporation has got into with its first experiment in dealing with tuberculosis, the Insurance Commissioners are still trying to persuade Insurance Committees to abrogate their functions, and hand over their funds to local authorities. A representative of the Commissioners waited on the co. Monaghan Insurance Committee at its last meeting to express approval of this course. The representative added that the Committee should retain a fraction of the 1*s.* 3*d.* per head, "to meet what were termed special administrative charges, the cost of medical forms, and such like." In suggesting that Insurance Committees should thus alienate almost their entire income, the Commissioners overlook the fact that under Section 60 of the Act, Committees are entrusted with important powers and duties with regard to supervision of the public health and to provision of instruction in sanitary

matters. In Ireland, where health administration is notoriously lax, it is of great importance that these powers should be used, but the suggestion of the Commissioners would tend to prevent this.

The Lord Lieutenant's Frank.

The fact that the correspondence of the Women's National Health Association is franked by the seal of the Lord Lieutenant has long caused comment, as it was felt that by its privilege of free postage the association was really receiving considerable endowment from public funds. Questions on the matter have frequently been asked in the House of Commons, and on a previous occasion the Chief Secretary declared that the correspondence of the association was not carried free by the post. Last week, in answer to Captain Craig, he contradicted this, and admitted that "in accordance with a custom of long standing in connexion with public and social or charitable objects His Excellency's frank is used."

The late Dr. G. A. Gibson and Dublin.

Nowhere outside of Edinburgh is the death of Dr. George A. Gibson more regretted than in Dublin. For many years he was one of our most frequent and welcome visitors. He was an honorary graduate of Dublin University, and he held for a term the office of extern examiner in medicine. When in Dublin last July for the bicentenary celebrations he was elected to an honorary Fellowship of the Royal College of Physicians of Ireland.

The Hospital for Sick Children, Belfast.

At the fortieth annual meeting of the supporters of this charity on Jan. 23rd it was reported that during 1912 652 patients had been treated in the wards of the hospital, and 3501 in the extern department. Several of the speakers referred to the serious effect the Insurance Act was having in reducing contributions to the hospital, while the need for support is all the more pressing, as under the Act there is no benefit for children.

Ulster Medical Society: Entertainment by the President.

The President of the Ulster Medical Society, Dr. R. W. Leslie, entertained the Fellows, Members, and a number of personal friends at a smoking concert in the Belfast Medical Institute on the evening of Jan. 24th. A large number were present and a most agreeable and interesting entertainment was provided. The evening was a marked success.

Jan. 28th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Researches on the Putrefaction of Butcher's Meat.

ACCORDING to researches detailed in a communication by M. Piettre before the Society of Comparative Pathology on Jan. 14th, the first step towards putrefaction in meat consists of ammoniacal and hydrosulphide fermentation due to a large aerobic, very mobile, Gram-staining bacterium of the proteus group. It is characterised by an ammoniacal and hydrosulphide odour and a green colouration of the tissues, especially fatty tissues, mainly localised to superficial regions. The organism invades the tissues, especially the veins, during the period of cooling of the carcass, multiplying and distributing itself widely. It is desirable, therefore, to cool the meat as quickly as possible down to 15° C. to inhibit the development of bacteria. This rapid cooling, with or without ventilation, hastens muscular rigidity and prepares it for the refrigerating chamber. Ignorance of this first stage of putrefaction and of its consequences explains the mischances that occur unless care is taken in refrigeration. By exposing meat already tainted to cold certain loss is entailed. But if great precaution is demanded before putting into the refrigerator large carcasses, such as those of oxen, calves, sheep, or pigs, how much more necessary is it in the case of smaller things, such as game and poultry, which are particularly liable to microbic invasion, because of the relatively great extent of their cutaneous and intestinal surfaces to the thickness of their muscles and because game especially can rarely be cooled immediately after death. These, therefore, are more frequently tainted before being exposed to cold, and remain so on removal from the cold chamber. The common practice is a confirmation of this view. The drawing of poultry contaminates the abdominal walls and injures their preservation by cold, hence it would be advantageous to evacuate their intestines with a purgative before killing, as, indeed, is done by workmen who are wont to give salt water to pigeons before killing them. In the present defective use of the refrigerator a rigorous sanitary control of meats, and especially of game and poultry, is demanded on their removal from cold storage, and particularly a careful inspection of such viands coming from abroad. In future use of the refrigerator, based on ascertained scientific data, the sanitary supervision of meats will take place not when they are removed from cold storage, but when they are put into it; for meats which are placed in cold storage free from taint will be removed from it in wholesome condition.

The Responsibility of the Medical Man.

In the case of the young girl, referred to in my last letter, who sued Dr. D. for injuries sustained in the process of epilation by the X rays, the Court of Appeal has awarded 5000 francs damages against the medical man.

The Notification of Tuberculosis.

The recent discussion on the compulsory notification of tuberculosis at the Academy of Medicine was continued by M. Mesureur, director of the Assistance Publique, on Jan. 21st. With special reference to the demands of M. Widal, who urged the isolation of tuberculous cases in hospitals, and of M. Armaingaud, who demanded that on the construction of a new hospital special quarters should be reserved for the treatment of tuberculous cases, he stated that for eight years this problem had engaged the attention of the medical and administrative staffs of the Paris hospitals. He asked how, since they had not yet been able to solve the problem for Paris, such hospital organisation could be insisted on in the provinces. M. Mesureur then pointed out that since 1904 it had been recommended that towns possessing several hospitals should devote one or more to the exclusive treatment of tuberculosis, or at least assign to tuberculous cases special accommodation in the existing hospitals. A first step had been taken at Paris in this direction. At the Laennec two special tuberculosis services, giving a total of 250 beds with a dispensary for out-patient consultation, had been established. At the Brevannes a special pavilion of 500 beds for adults and one of 80 beds for children had been constructed, and there had been opened at the Cochin a special tuberculosis service of 130 beds. Further, in the outskirts of Paris an infirmary of 1000 beds, devoted to convalescent and incurable cases, was to be undertaken. Since 1904 the Assistance Publique had brought forward a plan for providing hospitals and special accommodation for tuberculosis, and it proposed to transform 24 of the services of general medicine into special services for bacillary diseases. In 1910 the subject was further discussed with the assistance of the medical staffs of the hospitals, but the discussion resulted in only partial measures being taken, such as isolation in the wards, the establishment of partitions, of cubicles (boxes), and of balconies. M. Mesureur, in conclusion, asked the Academy to decide if those who considered isolation an imperative necessity were mistaken, and if the partial, fragmentary, and intermittent isolation, as practised to-day in the Paris hospitals, was a solution of the problem.

Jan. 27th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A Proposed Administrative Chamber for the Dental Profession.

A BILL brought before the Prussian Parliament proposes the establishment of an administrative chamber for the dental profession of the kingdom. The provisions of the Bill are very like those of the enactments relative to the medical chambers, with the difference that the medical profession has a chamber for each province and a joint committee of all the chambers as a central body. The dental chamber is intended to deal with professional questions, especially study, both undergraduate and post-graduate, examinations, dental hygiene, and other matters of importance. It will be consulted by the Government, and has also the right of petition in questions concerning the profession. Every legally qualified German dentist residing in

Prussia is entitled to vote for the chamber, and may be proposed for election as a member of it. Anyone having a medical and dental qualification may vote for both the medical and the dental chamber, and is also eligible as a candidate for election. The mode of election is the same as for the medical chambers. A court of honour is not provided for, but the committee of the chamber is authorised to withdraw the right of voting from offenders against ethical rules. The dental profession is the last to have the benefit of possessing a chamber. The earliest were the medical chambers which were instituted 25 years ago; then came the chambers of the pharmaceutical and the veterinary professions. Their work has not always proved very important, as the Government and the Parliament have in many cases not conceded their just demands.

Women Assistants in Laboratories.

During the last two years several women have received appointments as unqualified assistants in laboratories, both public and private. They do not undertake scientific work, but only assist the scientific staff in routine duties, such as staining microscopical specimens, the preparation of staining fluids, and the making of simple chemical and microscopical examinations. These laboratory assistants have hitherto had no systematic training, but have merely learnt by practice those manipulations which were needed in their respective laboratories, so that on moving from one place to another they had again to be trained for the wants of their new appointment. The scientific staff of the laboratory had neither leisure nor inducement to give their subordinate assistants more than a superficial knowledge of their duties. The increasing demand for female assistants has now led to the establishment of a school for them in connexion with the hygienic and pharmacological institutes of the University of Jena. The training will continue for one year, and will include technical exercises and theoretical lectures in biology, anatomy, physiology, bacteriology, and hygiene. In the last weeks of each course a special training in a branch preferred by the student is provided for. The institute also procures appointments for its pupils. The laboratory assistants have already formed an association for the purpose of improving the position of their members in financial and other respects.

Mortality from Diabetes.

The statistical records of Prussia show that the death-rate from diabetes has been increasing of late years. In the year 1911 there were registered 3153 deaths from that disease, being 8 in each 100,000 of the population. Only 3·6 deaths in each 100,000 were caused by diabetes on an average in the period from 1891 to 1900, but nearly 5 in 1910. It is suggested that the increase is partly caused by the growth of luxury and the greater consumption of rich food, and also by the nervous strain connected with modern life. On the other hand, the increase may be regarded partly as only an apparent one, caused by various influences favourable to accurate diagnosis, such as the multiplication of sick clubs, life insurance, and clinics and hospitals, which have led to a more frequent examination of urine than was usual some years ago. With respect to individual trades and professions it has been found that persons engaged in the preparation and sale of food and spirituous liquors, soldiers, and men belonging to the civil and ecclesiastical services had a relatively higher death-rate from diabetes than other classes of the population.

Death of Professor Binz.

Medicine has to mourn the death of the eminent pharmacologist, Professor Binz, who has passed away in Bonn at the advanced age of 80 years. Professor Binz was born in 1832 in Bernkastel on the Moselle, in the renowned vintage district of Germany. On the completion of his medical curriculum at the Universities of Würzburg, Bonn, and Berlin, he became an assistant at the medical clinic of the University of Bonn. Afterwards he went for post-graduate study to Berlin, where he worked under Professor Virchow and Professor Fredrichs respectively, and as long ago as 1868 he became recognised as a *privat-docent* in pharmacology. In 1869 a new pharmacological institute was founded and Professor Binz was appointed its director and head, a position which he held until he retired some years ago owing to his advanced age. In 1873 he became ordinary professor; he was several times elected dean of the Faculty, and in 1885 he was chosen to be rector of the University. He took an active part in the wars of 1866 and 1870, in the latter of which he was the head of one of the military hospitals in Compiégne, near Paris. His principal work was on quinine, salicylic acid, the essenial oils, and the antagonisms of atropine, morphine, and arsenic. Although he had not been engaged in clinical work for a great many years, in fact not since the days of his assistantship, he nevertheless always laid great stress on the practical side of pharmacology. He was an excellent chemist and physiologist, and a prominent lecturer and teacher whose discourses were attended by students of every nationality.

Jan. 27th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Hæmorrhagic Small-pox among Turkish Immigrants.

THE *Leopolis*, one of the steamers of the North German Lloyd, recently arrived in Trieste from Salonica with 797 Mohammedan immigrants, among whom there were 100 children and 50 infants. On the voyage 6 of these passengers died from acute diseases and were buried at sea. The steamer and its passengers have been subjected to a strict medical supervision, and as 3 cases of hæmorrhagic small-pox were found on board orders were given that all the passengers should be vaccinated. Up to Jan. 17th 300 immigrants have been allowed to land, and when all have been landed the ship will be disinfected. In the St. Bartholomeo Hospital there are at present altogether 1500 immigrants whose condition is for the most part favourable.

Prohibition of the Use of both White and Yellow Phosphorus for Matches.

On Jan. 1st there came into force a new law which prohibits the use of white and yellow phosphorus in the manufacture of matches. Not only is the manufacturing of such matches forbidden, but also their importation from other countries and their sale. The prohibition is suspended only with relation to the "lighting cords" used in mines for the lighting of safety lamps. This new law is the result of repeated urging by the Medical Board of the Workmen's Insurance Office, which has to support for the remainder of their lives hundreds of workmen who have become incapacitated on account of phosphorus poisoning. One of the surgical wards of the University Clinic was always filled with cases of phosphorus necrosis, the destruction of tissue being mostly so extensive that treatment was of no avail.

Raising of the Fees of Medical Practitioners.

The general increase in the cost of food and clothing, and the rise in house rent and taxes, have involved the raising of medical fees. As, however, there is a decree of the Minister of Public Health establishing a minimum scale of fees in the different towns and in general throughout the whole country, most people pay only these minimum fees, and practitioners are unable to raise them, because whenever actions for the recovery of fees are brought the civil court always orders the defendant to pay the minimum fees determined by the Minister of Public Health. The fees of family practitioners are, however, not determined on this principle, and in most towns the local associations have announced a rise of 30 per cent. in the fees payable to family practitioners, a change which in most cases was not opposed. According to this rise the fees now charged are as follows. In towns of up to 30,000 inhabitants, taking families of moderate income and consisting of from four to five members, the fee of a family practitioner is 100 kronen (= £4 3*s.* 4*d.*). In Budapest the fee is from 150 to 200 kronen. These medical fees are paid in half-yearly instalments. Extra fees have to be paid for night calls (only in some towns); for consultation with other medical men; for visits elsewhere than at the patient's house, as, for instance, in a summer villa, or in a temporary surburban residence; for visits in sanatoriums and hospitals; for midwifery and for surgical operations. Considering that the average fee of a visit at the patient's home amounts to 3 kronen (2*s.* 6*d.*), even in the smallest towns, having from 8000 to 10,000 inhabitants, it may be said that the present position of the medical profession is satisfactory in Hungary. During the last two

or three years the number of new students has been so great that the Minister of Public Instruction is intending to lengthen the curriculum by one year in order to check overcrowding, which is a great obstacle to the proper and practical education of the students.

Newspaper Attacks on the Medical Profession.

A tragic incident of recent occurrence has given rise to much comment in the daily newspapers, some of the articles that have appeared being evidently intended to excite public opinion against the medical faculty. The circumstances were that a very well-known merchant named Schöberl had been killed by his son, who suffered from epilepsy and consequent dementia. This son, who was 28 years of age, lived in his father's house, and took a great interest in collecting and firing off pistols and rifles, with which he had already caused a panic at a summer villa in a village near Budapest. A few days ago several members of the family went to a theatre, Mr. Schöberl, who was 58 years of age, remaining at home with his imbecile son. The father seems to have found fault with his son for some reason, whereupon the latter with a pistol fired three bullets into his father's head, and as the wounds were not immediately fatal the murderer proceeded to strike him on the head with a large stick until he died. The newspapers are now mercilessly abusing the psychologists and the faculty in general, because they allowed an imbecile, who was dangerous both to himself and to the community, to remain at large instead of being placed in an asylum. This argument is, no doubt, correct, but it is in evidence that the young man had not previously shown symptoms of being dangerous. It is also true that intelligent parents ought not to allow their sons, even if they are quite sane, to collect pistols. On the other hand, if a person of note is placed in an asylum the medical men concerned are accused by the newspapers of sending a sane person to an asylum at the instigation of some interested individual.

Jan. 27th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Cape Hospitals and Charitable Institutions Ordinance.

THE Ordinance dealing with the hospitals and charitable institutions of the Province of the Cape of Good Hope takes effect from March 1st, and applies to every State-aided hospital and charitable institution in the province other than those controlled or maintained by the Government, by a local authority, or by any religious organisation or body. Institutions, however, which are reserved mainly for the aged or chronic sick are also exempted from its operations. For all existing institutions hospital districts are created, corresponding with the fiscal divisions within which they are situated; but in the native territories of the province, where there are no fiscal divisions, the areas of the hospital districts are left to be fixed by the Administrator and his executive committee. In areas where there are no institutions the Provincial Government is enabled to establish new hospital districts by Proclamation on petition from not less than 25 Parliamentary voters, if the proposal has been duly advertised in the local papers, and no counter petition has been received thereafter from a like number of voters or from any local authority in the proposed district. In the event of a counter petition being received by the Administrator, a new hospital district can be established in the area only with the consent of the Provincial Council.

Each hospital district will be under a board of from 6 to 36 members at the discretion of the Administrator after consultation with the old board. The local authorities will appoint one-third on the basis of their rateable property in the district. One-third will be elected by contributors to the board funds, one-sixth by the honorary visiting medical officers, and one-sixth will be Government appointees. One-third of the board will retire annually in rotation, but subject to re-election or reappointment. A contributor is defined as one who raises by any means not less than £1 per annum or makes a donation of not less than £20 towards the board funds, and includes local subscribers—i.e., those who do the same for a particular institution in the district, also existing life governors and patrons. An annual meeting of contributors will elect members and receive reports on the different institutions. Each institution will be governed, where there is only one in the district, by the board; when there are more, by committees of management appointed directly by the board. For every ten members of the committee the honorary visiting medical staff may elect two additional representatives. Stringent provisions forbid members of boards from trading with the institutions, a serious abuse in the past. The boards will take over existing property from the old boards and control all such existing and future institutions. All necessary officers will be appointed by the boards or by committees of management subject to the board's approval.

During the Committee stage of the Bill it was alleged that the existing system of staffing hospitals with European nurses was partly responsible for the "Black Peril," and an impracticable amendment was moved prohibiting European nurses from being employed in coloured or native wards. It was withdrawn and replaced by one requiring that within six months after the taking effect of the Ordinance every board must provide sufficient orderlies, ward-boys, native or coloured ward-maids or nurses to perform all menial duties in wards where native or coloured male patients are treated, but enabling European nurses in these wards to supervise their work and to render necessary professional assistance. After discussion this was accepted by the Government. No manager or matron of any institution can be appointed until 12 days after the Administrator has been notified of the proposed appointment unless the Administrator has previously approved thereof. The reason for this, apparently, is that in the past unsatisfactory appointments have been made, owing to the boards not having taken the trouble to make proper inquiries. Every matron, sister, staff nurse, head nurse or charge nurse, or midwife holding office under a board is required to be registered as such by a Provincial Medical Council, but the position of all existing officers is specially safeguarded. This is a salutary provision, tending to remedy a defect in the Cape Medical Act, which gives the Medical Council jurisdiction over the professional conduct of registered nurses but none whatever over unregistered nurses, thus making it an advantage for a nurse to remain unregistered.

Hitherto hospitals have been subsidised by grants from the State voted annually on no fixed principle, and varying largely in the past from political grounds. All this is now done away with, and a subsidy of 30*s.* for every £1 received in contributions or gifts of money other than bequests substituted. But in addition for every £1 received in bequests up to £500 the Provincial Government will pay 20*s.*, and a similar amount for every £1 received from paying patients. The 30*s.* subsidy will extend to voluntary contributions by any local authority in a hospital district, provided that it is made before Sept. 30th in each year. In case of a deficit in the funds of a board in any year, if the Provincial Government is satisfied that the board has reasonably endeavoured to collect voluntary contributions from the public and to recover fees from patients, and that having regard to the circumstances of the district and the class of patients furnished with relief a reasonable amount has been received from all such sources of revenue, it is empowered under the Ordinance to authorise the payment of the deficit in whole or in part in equal proportions out of the funds of the local authorities of the district and of the provincial revenues. In any district where special circumstances would render it unfair that the whole of any amount to be paid by the local authorities should be paid by them, the Provincial Government may reduce such amount by making a special grant not exceeding £150 in any calendar year. Local authorities are encouraged to make voluntary contributions, firstly by the Government subsidy of 30*s.* for each £1, and secondly by the fact that each local authority so contributing will get a special rebate of 20 per cent. of its contribution at the expense of those that have not contributed. These financial proposals came in for much criticism during the passage of the measure, but were eventually approved of. If money is borrowed from the Provincial Government by the boards to erect new buildings, half of the sinking fund and interest charges will be borne directly by the Provincial Government, the other half being taken into the board's accounts and again halved under

the subsidy plan. This is intended to encourage the building of new hospitals, and especially of small cottage hospitals, which in outlying parts of the province are badly required.

Boards will be empowered under Government sanction to establish new hospitals, dispensaries, maternity homes, convalescent homes, sanatoriums, and institutions for any other public charitable purpose within the meaning of the Ordinance, or for any two or more of the above-mentioned purposes. The classification asked for by the South African Medical Congress in 1910 has been adopted, and patients paying 3*s.* 6*d.* per diem and over towards their maintenance must, as far as practicable, in the absence of Government exemption, be provided with separate accommodation to those receiving relief free or at a lower rate. They are also liable for medical fees to their medical attendant and, subject to regulations, are entitled to select such attendant whether on the staff or not. Institutions may, however, be exempted from this temporarily. Relief may be refused to those capable of paying the charges of an approved private hospital or nursing home, save in exceptional cases. The Bill appears to aim at the establishment of three classes of hospital—namely, hospitals for paying patients not subsidised by the State, hospitals for part-paying patients, and hospitals for the poor, the two latter classes being subsidised by the State.

To prevent hospital abuse, except in cases of emergency, every person seeking admission to an institution at less than 7*s.* 6*d.* per day (which sum appears to be a trifle more than the daily average cost per diem) must supply certain specified information and must produce a certificate from his medical attendant. An applicant knowingly furnishing false or misleading information to obtain from a board treatment free of cost or at a lower rate will be guilty of fraud and may be punished. The charges for the relief granted to any person will constitute a debt due by that person to the board, and the charge for relief to a married woman or a minor will constitute a debt due to the board by the husband of the married woman or the father, mother, or guardian, recoverable at law. Lastly, provision is made for the appointment of a medical inspector of hospitals and charitable institutions. He is required to make an annual report on the working of the institutions for the Provincial Council. The measure as amended during its passage has not suffered materially from a medical standpoint, and, though a somewhat tentative and complicated piece of legislation, has been received with approval by the profession and the general public. Its success or otherwise must necessarily depend upon its administration, but with Sir Frederic de Waal as Administrator of the Cape Province there is every reason to hope that the Ordinance will be well and wisely administered. The latter, in bringing forward the Bill and in supporting the views of the South African Medical Congress, when it was before the House, has once again demonstrated his sympathy with the medical profession in a manner which unfortunately is all too rare amongst South African statesmen.

Jan. 10th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST.—A six months' course on diseases of the chest (including tuberculosis) was commenced at this hospital on Jan. 14th, when Dr. Barty King took for his subject Physical Examination of the Chest. The lectures from Feb. 10th to 15th and from June 9th to 14th deal with tuberculin.

NATIONAL ASSOCIATION FOR THE PREVENTION OF INFANT MORTALITY AND FOR THE WELFARE OF INFANCY.—Under the auspices of this association the Right Hon. John Burns will preside at an English-speaking conference on infant mortality, to which the King and Queen have given their patronage. It will be held at Caxton Hall, Westminster, on August 4th and 5th, immediately before the International Medical Congress. The subjects for discussion include: The Responsibility of Central and Local Authorities in the Matter of Infant and Child Hygiene; the Administrative Control of the Milk-Supply; the Necessity for Special Education in Infant Hygiene; Medical Milk Problems; and Ante-Natal Hygiene. Sir Thomas Barlow, K.C.V.O., is the chairman of the executive committee. Further particulars may be obtained from the secretary, 4, Tavistock-square, London, W.C.

Obituary.

WILLIAM LIVESAY, M.D. EDIN.

THE death is announced in his sixty-eighth year, on Jan. 24th, at the Pines, Bembridge, I.W., of Dr. William Livesay, who practised for nearly 40 years at Sudbury, Derby. Born at Ventnor, he received his medical education at Edinburgh, where he graduated M.B., C.M. in 1871, taking his M.D. degree in 1875. He interrupted his medical studies in 1869 in order to accompany Mr. (now Sir) James Lamont on a voyage of sport and discovery to Spitzbergen and Novaya Zemlya, acting as artist to the expedition. He afterwards edited the account of the voyage ("Yachting in the Arctic Seas." London: Chatto and Windus, 1876), the book being profusely illustrated by woodcuts from his beautiful drawings in black-and-white and water-colour. In those days photography was not the convenient process for travellers that it is now, and even water-colour drawing was not easy where, as he has recorded, his washes often froze on the paper. In 1871–72 he was successively resident surgeon to Mr. (afterwards Professor) Annandale, and resident physician to Dr. Haldane, while he also received the distinction of being one of the Presidents of the Royal Medical Society. As a student he took great interest in botany, obtaining a prize for a herbarium, and on his return from the Arctic he read a paper to the Edinburgh Botanical Society on the plants he had collected on that voyage. His interest in botany had an important influence on his life, for it was at the house of Professor John Hutton Balfour that he became engaged to a daughter of the late Dr. Thomas Shapter, of Exeter. He married and settled at Sudbury, in Derbyshire, where he remained for the rest of his professional life. To his friends it was somewhat of a disappointment that he aimed no higher, but he was fond of the country and possessed private means which made earning a large income no special object. He enjoyed his life, and generally managed to get a month in Scotland every autumn, while he frequently travelled in the spring. He was an accomplished etcher, an associate of the Society of English Etchers, but he published few plates; he designed book plates for his friends, and for many years sent them an etched Christmas card. About three years ago his heart began to fail, possibly connected with an attack of acute rheumatism he had in 1872. On the advice of his friends he retired from practice and went to live in the Isle of Wight, but last autumn his condition grew much worse and left no hope of his recovery. He possessed the gift of making friends, and will be missed by a wide circle who appreciated his sterling goodness of heart, his love of fun, his ready wit, and his genial sympathy.

He lost his wife many years ago, but two daughters survive who have devoted themselves to the work of the Wantage and East Grinstead Anglican Sisterhoods.

JOHN MILFORD BARNETT, M.D. EDIN., M.R.C.S. ENG., MAJOR (RETIRED), I.M.S.

THE death occurred at Bexhill, Sussex, on Jan. 24th, of Surgeon-Major John Milford Barnett, late of the Indian Medical Service. He was 82 years of age, and had resided at the Sussex health resort for some years. Born at Belfast, he was educated at Trinity College, Dublin, and Edinburgh University. Taking up the study of medicine, he became a Licentiate in Midwifery at Coombe Hospital, Dublin, in 1850, and two years later took his M.D. degree in Edinburgh, and became a member of the Royal College of Surgeons, England, in the same year. In 1853 he joined the Bombay Artillery, and was off Bombay during the terrible cyclone in November, 1854, and in which he had a narrow escape from death. In 1857 he served as surgeon of the 26th Bombay Regiment, N.I., with the Persian Expedition, and was present during the forced march on Boorazjoon, the battle of Khooshab, in which he was wounded, and at the bombardment and capture of Mohumera and forts. In 1860 he served as staff-surgeon of the Kattywar Field Force against the Wagheers. Five years later he was promoted to the rank of major, and he retired in 1869. He was twice married, his second wife (a daughter of General Brooke Boyd, of St. Leonards-on-Sea) surviving him, while four sons and three daughters also mourn their loss.

THE NATIONAL INSURANCE ACT.

THE ADMINISTRATION OF MEDICAL BENEFIT.

LITTLE information is at present available as to how far medical benefit, in fact as well as in name, has been provided by the Insurance Committees for insured persons throughout the country. As this benefit only became due on Jan. 15th last, anything approaching full and complete returns could hardly be expected so soon, and the very partial accounts which have appeared in the lay newspapers give small help in reviewing the position. It is clear, however, that the stand made by the medical profession in London has been maintained in spite of the formal release from the pledge given on Jan. 18th by the Representative Body of the British Medical Association. As a consequence the London panel is still far from adequate, and complaints have been made in coroners' courts and elsewhere that insured persons in various parts of the metropolis are suffering from a shortage of medical attention, and that many practitioners on the London panel are overwhelmed with the duties placed upon them. This serious state of affairs demands an immediate remedy, a sad significance having been given to the latter allegation by the inquiry into the death of a practitioner at East Ham. The London Insurance Committee, since it is bound to supply an adequate medical service, must by some means or other increase the number of medical men upon the panel, if the demand by the London Medical Committee that insured persons should be allowed to contract out of the Act cannot be granted.

RESIDENT STAFFS OF INSTITUTIONS AND MEDICAL BENEFIT.

The finance committee of the Metropolitan Asylums Board on Jan. 25th reported as to the arrangements to be made for medical benefit of the insured members of the staff, comprising some 1800 persons, of whom 1750 were women, practically all being entitled to residential emoluments. In the case of the non-resident staff the committee said there was no reason why they should not proceed as ordinary insured persons, selecting their medical attendant from the panel or otherwise conforming with the regulations. The case of the resident insured staff, however, was entirely different. Under the Regulations, any or all of the medical men on the local panel might be chosen by different individuals of the resident staff of any institution. This could hardly fail to give rise to the greatest difficulties, even if the managers were willing to allow outside doctors free access to their institutions. The medical superintendents of the Board's London hospitals were unanimous as to the impracticability of such a position. The Board's medical officers were required to attend sick members of the resident staff, although the staff could not demand treatment as a right.

In view of the serious considerations of administration and discipline, and the questions of medical responsibility involved, informal inquiries were made of the Insurance Commissioners, who advised that the Board should communicate with the Insurance Committees for the areas concerned, with a view to their allowing the resident insured staff collectively, in lieu of receiving medical benefit under arrangements made by the Committees, to take their medical benefit direct from the Board. The Board would guarantee treatment, medicines, &c., practically on the lines voluntarily followed heretofore, some modifications in the matter of records being made, and the Board would be entitled to claim from the Insurance Committees in respect of this service. While individual employees were under no obligation to accept this proposal, the committee expressed the hope that they would do so. The Board approved the arrangements suggested by the committee.

PROTEST AGAINST THE ESTABLISHMENT OF A SANATORIUM AT SUTTON.

In regard to the arrangements, now almost completed, for the reception of tuberculous persons entitled to sanatorium benefit at the Downs School, Sutton, Surrey, the Metropolitan Asylums Board having entered into an agreement with the London County Council for this purpose,[1] a deputation from the Sutton urban council waited upon the members of the Metropolitan Asylums Board on Jan. 25th. The spokesman was Dr. G. H. J. Hooper, honorary medical referee to the Royal National Hospital for Consumption, and the object of the deputation was to protest against the establishment of a tuberculosis sanatorium in the town.

Dr. HOOPER said that the public in Sutton were terrified at the proposal to establish a sanatorium in their midst, and, as a medical man, he thought that there was some cause for their fears. To the south of the Downs School there was some small property, and immediately opposite there was an elementary school. On the north side was a large eligible building property, which was regarded as the "plum" of the district. The people interested in the development of this property and those living in the vicinity were horrified at the idea that these poor patients should be treated at the school. Near the building was a farm from which a large number of residents were supplied with milk. He received milk from that farm himself, but if the school were used as a sanatorium he would refuse to have milk from that farm, and other people would do the same. He did not regard a building intended for the accommodation of 600 girls as suitable for a sanatorium for 300 patients. The consumptives could not be kept within the four walls of the Downs estate; they must have exercise, and would be found walking over the Downs and in the streets of Sutton. That involved a danger to the inhabitants. It might be replied that the patients would be supplied with the necessary utensils, but would they use them? It was not a fancy to say that it would mean ruin to Sutton to have 300 tuberculous patients wandering over the Downs and in the town. The inhabitants asked the Board to help them if possible; they knew they could not object to having institutions built in their midst, but in addition to the sight of suffering humanity there were questions of risk and also of sentiment involved. He did not think the Downs School, from its exposed situation, was suitable for a sanatorium, and thought that a more suitable place could be found without injuring a prosperous residential town.

Sir EDWARD WHITE, a member of the Board, pointed out to Dr. Hooper that the Brompton Hospital was in the midst of a purely residential neighbourhood, and that the patients could be seen from the road taking exercise in the grounds.

Dr. HOOPER replied that patients were only kept at the Brompton Hospital until they could be sent to a more suitable place.

Professor W. R. SMITH: The local cases of tuberculosis walk about Sutton?

Dr. HOOPER agreed that this was so.

Mr. W. DENNIS, the chairman, thought it would not be fair that the deputation should go away under the impression that the arrangements to which they objected could be completely abandoned after having received the approval of all the authorities and Government departments concerned. These arrangements would only obtain until March, 1914, though he could not promise that they would not be continued after that date. Neither could he say whether it would be possible to keep the patients within the boundaries of the institution. He could assure the deputation that in arriving at its conclusion the Board had had advice which it thought thoroughly reliable and good.

No discussion took place after the deputation had withdrawn.

A NATIONAL INSURANCE ACT CHART.

We have received a copy of an ingenious chart,[2] 40 inches wide by 30 inches deep and printed in colours, which sets out in clear, terse language the provisions of the National Insurance Act, and arranges this mass of digested information upon an orderly system, whereby any point that is in doubt may be brought to a focus with the least possible waste of time. This result has been obtained by what the compilers call a scientific method of functional analysis. Although their own explanation of their method is somewhat obscure, the method itself in its application to a complex Act of Parliament is quite simple. The subject matter of the Act, having been reduced to its most wieldy proportions, is rearranged in seven vertical columns according to the seven

[1] THE LANCET, Dec. 14th (p. 1671) and 21st (p. 1743), 1912.

[2] Chart of the National Health Insurance Act. Published by the Association of Standardised Knowledge, Limited, of 15-16, Buckingham-street, Adelphi, London, W.C. Price 1s. and 3s. 6d.

"functions" postulated by the compilers. The names given to these functions are not very happy, but the central idea is sound, and the system works. The essence of the Act, thus grouped into parallel columns, is further divided horizontally by headlines into five levels, corresponding to the five main groups of persons concerned in the working of the Act. Assuming that this chart claims to be merely a summary and guide to the Act and to nothing but the Act, it is a remarkable achievement in graphic analysis. It is not a commentary in the sense of making comments, and it does not touch the Regulations and Rules. It therefore makes no attempt to clear up those difficulties of procedure upon which the Act itself is vague or silent, and it treats the medical profession in the same airy fashion as does the Act. Hence the chart has the defects of the Act to which it is an index, while its merits are all its own. We believe that it will prove a great convenience to all who are engaged in the administration of the Act.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—E. M. Brand (Section II.), Royal Free Hospital.
Medicine.—G. M. Cordingley (Sections I. and II.), Royal Free Hospital; G. E. Cuttle (Section I.), Manchester; R. B. F. Frazer (Sections I. and II.), Charing Cross Hospital; and J. W. Harrison (Sections I. and II.) and G. R. Lynch (Section I.), St. Mary's Hospital.
Forensic Medicine.—J. A. A. Boddy, Manchester; G. M. Cordingley, Royal Free Hospital; R. B. F. Frazer, Charing Cross Hospital; and H. C. C. Hackney, King's College Hospital.
Midwifery.—G. M. Cordingley, Royal Free Hospital; G. E. Cuttle, Manchester; J. A. Prendergast, Leeds; and L. C. Smith, London Hospital.

The diploma of the Society was granted to the following candidate, entitling her to practise medicine, surgery, and midwifery:—E. M. Brand.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Jacob Wolff, author of several monographs on influenza and other matters coming largely under the notice of the general practitioner, has been granted the title of Professor.—*Gratz:* Dr. Eugen Petry, *privat-docent* of medicine, has been granted the title of Extraordinary Professor.—*Munich:* Dr. Walter Spielmeyer, the chief of the Laboratory of Cerebral Anatomy of the University Psychiatric Clinic, has been granted the title of Extraordinary Professor. Dr. Meinhard von Pfaundler, extraordinary professor of children's diseases, who was recently offered the chair of his specialty at two other universities, has been induced to remain in Munich by being appointed Ordinary Professor.—*Vienna:* Dr. Emil Redlich has been appointed Extraordinary Professor of Psychiatry and Neurology, and Dr. Wolfgang Pauli Extraordinary Professor of Medicine. Dr. Wilhelm Roth, *privat-docent* of laryngology, Dr. Emil Schütz, *privat-docent* of medicine, Dr. Heinrich Winterberg, *privat-docent* of general pathology, Dr. Gabriel Nobel, *privat-docent* of dermatology, Dr. Sigmund Erben, *privat-docent* of medicine, Dr. Stephan Weidenfeld, *privat-docent* of dermatology, Dr. Karl von Stejskal, *privat-docent* of medicine, Dr. Otto Marburg, *privat-docent* of neurology, Dr. Wilhelm Falta, *privat-docent* of medicine, Dr. Josef Meller, *privat-docent* of ophthalmology, Dr. Robert Daerr, *privat-docent* of pathology, Dr. Alfred Exner, *privat-docent* of surgery, and Dr. Egon Ranzi, *privat-docent* of surgery, have been granted the title of Extraordinary Professor. Dr. Albert Müller and Dr. Dr. Wilhelm Neumann have been recognised as *privat-docenten* of Medicine.—*Würzburg:* Dr. Helly, *privat-docent* of pathological anatomy, and Dr. Lüdke, *privat-docent* of medicine, have been promoted to Extraordinary Professorships.

THE CHADWICK TRUST.—This Trust, founded in 1895 under the will of the late eminent sanitarian, Sir Edwin Chadwick, has arranged for a series of public lectures to be delivered during this year in London and certain provincial towns. The object of the Trust is the promotion of sanitary science in all or any of its branches in various ways indicated by the founder, or otherwise at the discretion of the trustees. The first of the courses of lectures will be given on Friday evenings, Feb. 7th, 14th, and 21st, at 8.15 P.M., at the Royal Sanitary Institute, Buckingham Palace-road, by Mr. H. Percy Boulnois, M.Inst.C.E., on "Hygiene of the Home." The chairman of the Chadwick Trust, Sir William J. Collins, will preside on the first evening. Students and the general public will doubtless welcome these lectures, with their information and suggestions concerning the hygienic value of life's most intimate environment. In April Dr. J. T. C. Nash will lecture on "The Evolution of Epidemics," to be delivered at the London County Hall, Spring Gardens. Sir Alexander Binnie, M.Inst.C.E., will be the chairman on behalf of the Trust at the first lecture. In June Dr. F. W. Mott will give a course at the Royal Society of Arts under the title of "Nature and Nurture in Mental Development." Sir James Crichton-Browne, also a Chadwick Trustee, will preside at the first lecture. Among the lectures in contemplation for the provincial cities are those on "The Public Milk-supply: Some Criticisms and Suggestions from the Public Health Standpoint," by Professor Henry R. Kenwood at Manchester; and on "Water-supply," by Mr. E. P. Hill, M.Inst.C.E., at Birmingham. Glasgow, Bristol, and other cities of the kingdom will also be provided with Chadwick public lectures during the year, all of which will be open to the public, but will aim also to attract post-graduate and advanced students of engineering, medicine, and other cognate sciences. The secretary to the Trust, to whom all communications should be addressed, is Mrs. Aubrey Richardson, 8, Dartmouth-street, Westminster.

FORTY-SECOND CONGRESS OF THE GERMAN SURGICAL ASSOCIATION.—This Congress will take place in Berlin in the Beethovensaale der Philharmonie (entrance—Köthener Straase, 32), from March 26th to 29th next. This hall has been chosen by the committee from a great number inspected, and it is hoped that this year certain inconveniences of previous years will be avoided. There is a large number of members (2179), and in consequence they are begged to curtail their papers as much as possible. Some of the chief papers to be submitted will be Duodenal Ulcer, by Herr Küttner (Breslau); Brain and Spinal Surgery, by Herr von Eiselsberg and Herr Ranzi (Vienna); and the Treatment of Joint and Bone Tuberculosis, by Herr Garrè (Bonn). The President for the year 1913 is Dr. O. von Angerer, München-Harlaching (Willroiderstrasse, 8.), and the treasurer is Herr Melzer, Langenbeckhaus, Ziegelstrasse, 10 and 11, Berlin, N. 24.

LITERARY INTELLIGENCE.—Mr. Murray's quarterly list for January, 1913, contains among his forthcoming works several on subjects having more or less professional interest for the medical man. Among these may be mentioned "Practical Agricultural Chemistry," by S. J. N. Auld, D.Sc., and D. R. Edwardes-Ker, B.A.; "Comparative Anatomy of Vertebrates," by Professor J. S. Kingsley, of Tufts College, Mass.; "The Reduction of Domestic Flies," by Edward Halford Ross, M.R.C.S. Eng., L.R.C.P. Lond.; "Further Researches into Induced Cell Reproduction and Cancer and other Papers," by H. C. Ross, M.R.C.S. Eng., J. W. Cropper, M.B. Liverp., E. H. Ross, M.R.C.S. Eng., H. Bayon, M.D., W. J. Atkinson Butterfield, F.I.C., and S. R. Mowlgarkar, F.R.C.S.; "The Problem of the Gasworks, Pitch Industries, and Cancer" (anonymous); "Problems of Life and Reproduction" (Progressive Science Series), by Professor Marcus Hartog, D.Sc.; "The Interpretation of Radium," by Frederick Soddy, M.A.; and "Heredity," by Professor J. Arthur Thomson.

NATIONAL DENTAL HOSPITAL.—The annual general meeting was held on Jan. 22nd, at Great Portland-street, London, Mr. Alfred Farquhar being in the chair. The balance sheet showed a debt of £467, and friends are begged to help the committee to reduce this amount. The report showed that during the year grants had been received from King Edward's Hospital Fund for London, £250; King Edward's Hospital Fund for Improvements, £200; and the Metropolitan Hospital Sunday Fund, £44 16*s.* 2*d.* Donations had also been received from Smith's Charity, £250; the Worshipful Company of Goldsmiths, £25; Messrs. Bass, Ratcliff, and Gretton, £10 10*s.*; Mr. Harold Ridges Rowe, South Africa, £10 10*s.*; and Miss M. E. Swaine, £10. A legacy was received, per the trustees of the late Miss M. Gibbon, for £175 19*s.* 4*d.* Considerable improvements have been

effected, and a small balance remains in hand, but not sufficient to complete the equipment still needed. The arrangements for amalgamation with a general hospital had been suspended at the request of the Board of Education until the issue of the Report of the Royal Commission on University Education in London, which was expected in January, but is not yet out. The attendances of patients had reached a total of 24,129 made by 17,260 separate patients, for whom 50,320 operations had been performed.

EXETER LYING-IN CHARITY.—The annual meeting of supporters of the Exeter Lying-in Charity was held on Jan. 20th. The 111th annual report stated that during 1912 92 women had been attended in their confinements, making a total of 17,621 since the foundation of the charity.

UNIVERSITY OF OXFORD: READERSHIP IN OPHTHALMOLOGY.—During the present term a Reader in Ophthalmology will be elected. Applications for the office must reach the Registrar before Feb. 15th.

WEST CORNWALL INFIRMARY, PENZANCE.—The financial statement of the West Cornwall Infirmary shows a deficit of £232 at the end of 1912, as compared with one of £302 in the preceding year.

KING EDWARD'S HOSPITAL FUND FOR LONDON.—The following annual subscriptions have been received: Mr. Walter Morrison, £5000; Mr. W. Waldorf Astor, £1000.

A DEVONSHIRE CENTENARIAN.—Mrs. Moore, of Torrington-place, Plymouth, celebrated the anniversary of her 102nd birthday on Jan. 20th.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Select Committee on Patent Medicines.

THE Select Committee on Patent Medicines of the House of Commons heard further evidence on Thursday, Jan. 23rd. Sir HENRY NORMAN was in the chair.

Sir JOSEPH BEECHAM, proprietor of "Beecham's Pills," gave evidence. The business at St. Helens, Lancashire, in connexion with "Beecham's Pills," he stated, was established by his father about 60 years ago. Both "Beecham's Pills" and "Beecham's Cough Pills" were made from valuable secret formulæ. He had not sought medical or other testimonials, and he had not published testimonials, although he had received thousands. He knew as a fact that medical men had often advised their patients to take "Beecham's Pills" as a useful aperient, and their success had been built up certainly on the fact that the public had approved of them and continued to take them. The analyses of the pills published in "Secret Remedies" were inaccurate and failed to mention some active ingredients. The circular issued with each box of "Beecham's Pills" stated that with serious or complicated disorders of the nervous system a physician was alone competent to deal. As regarded certain other maladies also, the public were informed that the advice of a properly qualified medical man was necessary. Patent medicines were the handy home remedies of the people, who in most cases having used them before, knew their dose and their action, and in whatever part of the world users were located, the favourite remedy could be obtained. He objected most strongly to any publication of the formula. It would obviously lead to other persons, whether chemists or druggists, making up an article and capturing the public by stating that it was made from Beecham's own formula. It was an advantage and saving to the public that a good formula should be compounded constantly and without variation from the best drugs and under the same supervision, rather than that even a similar formula should be made up by various chemists and others from drugs of varying grades and under certain conditions.

In reply to Mr. LYNCH, Sir JOSEPH BEECHAM said that he did not know whether his father in starting "Beecham's Pills" discovered the therapeutic value of any new drug, but the combination which he discovered was a very excellent one.

Mr. H. LAWSON: He discovered the money value.

Mr. LYNCH: What did your father do to entitle him to any kind of protection?

Sir J. BEECHAM: Well, he introduced "Beecham's Pills," and I think he was entitled to protection.

Mr. LYNCH asked for particulars as to the business now done in "Beecham's Pills."

Sir J. BEECHAM: There are considerably over a million of these pills sold every day, Sundays included.

The CHAIRMAN: What does that weigh in round figures?

Sir J. BEECHAM: I understand that the total weight of the pills we sold last year was close on 50 tons.

Mr. LYNCH: Sir Philip Magnus and I have worked that out as an overturn of £360,000 a year.

Sir J. BEECHAM: I do not think that you are very far wrong.

Mr. LYNCH: Can you tell us how much you spend annually on advertising?

Sir J. BEECHAM: Last year we spent a little over £100,000 on advertising—that is, all over the world.

The committee adjourned.

HOUSE OF COMMONS.

WEDNESDAY, JAN. 22ND.

Medical Women and the National Insurance Act.

Mr. SNOWDEN asked the Secretary to the Treasury to state how many women doctors had joined the insurance panels; and if insured women, who desired to be attended by a woman doctor where there was a resident woman doctor but where no woman doctor was on the panel, could make their own arrangements with the woman doctor and receive the equivalent grant from the Approved Society.—Mr. MASTERMAN replied: I could not answer the first part of the honourable Member's question until an examination had been made of the panel lists of 196 different committees, and I do not feel that the labour would be justified at the present time, seeing that additional doctors are joining the panels every day. With regard to the second part of the question, it would be the duty of the Insurance Committees upon application to consider the circumstances of each particular case.

Medical Benefit and Friendly Societies.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury whether, in view of the fact that under Section 15 (2) (e) of the National Insurance Act there was an obligation on the Insurance Committees to provide medical benefit for old members of Friendly Societies who did not become insured persons on the same terms of remuneration as those arranged for insured persons, he would say whether arrangements were being made by the Insurance Committees to provide medical benefit for old members of Friendly Societies who did not become insured persons; whether these members would be charged not more than 6s. for their medical benefit; and whether the additional 2s. 6d. would be granted in respect of them.—Mr. MASTERMAN said in reply: The answer to the first part of the question is in the affirmative, and to the second and third parts in the negative. The arrangements made give an option to societies, and are not obligatory on them. I have no evidence to show that the fact that doctors on the panels are receiving a larger remuneration than hitherto in respect of insured persons is necessitating an expenditure upon uninsured persons of a much higher fee than that for which they have been treated in the past.

Non-panel Medical Service in Scotland.

Mr. WATT asked the Secretary to the Treasury whether his attention had been called to posters, leaflets, and pamphlets issued and signed by medical practitioners in Scotland dealing with the administration of the National Insurance Act, and advertising the terms on which they were willing to perform outside of the panel similar duties to those undertaken by doctors on the panel in respect of insured persons, and, if so, whether it was proposed that payment be made from State funds to those doctors.—Mr. MASTERMAN wrote in reply: The answer to the first part of the question is in the affirmative. No contribution from Insurance funds towards the cost of the medical treatment of persons who are attended by doctors not on the panel will be made except under the conditions which I have stated in this House.

Dispensers under the National Insurance Act.

Mr. TOUCHE put a series of questions to the Secretary for the Treasury in regard to the cases of individual dispensers who had been precluded from dispensing medicines for insured persons under the National Insurance Act.—Mr. MASTERMAN (in a written answer) replied: The conditions under which persons are allowed to arrange with Insurance Committees to supply medicines requiring dispensing, to dispense medicines for other persons or firms who are supplying them, and to supply drugs not requiring dispensing and appliances, respectively, are laid down in explicit terms in Section 15 of the National Insurance Act and in other Acts determining the conditions under which medicines are supplied, and the Commissioners have no power to alter them by Regulations.

The Post Office Medical System and the Insurance Act.

Mr. GLAZEBROOK asked the Postmaster-General whether his attention had been called to a circular issued by the Post Office authorities on Dec. 31st, 1912, to medical officers of Post Offices to the effect that the conditions of their service hitherto in force would be superseded by the arrangements for medical benefit under the National Insurance Act; whether he was aware that a further circular was addressed to the same medical officers by the same authorities on Jan. 13th, 1913, stating that the Insurance Commissioners were prepared to recognise the Post Office medical system as an institution in the sense defined by Section 15 (4) of the National Insurance Act, and indicating that the effect of this would be that, contrary to the statement of Dec. 31st, the conditions of service of Post Office medical officers would continue as before, the only difference being that Post Office officials would, if they applied to exercise their right of free choice of doctor, be able to receive their medical benefit from another doctor, provided he was on the panel; would he say what was the object of sending these contradictory circulars; and whether the intention of applying for the recognition of the Post Office medical system as an institution was only conceived between the dates of the two circulars; and was the object of the first circular to force the Post Office medical officers to join the panels under the impression that the Post Office medical system, and with it the appointments thereto, was at an end.—Mr. H. SAMUEL wrote in reply: In the circular of Dec. 31st, Post Office medical officers were informed that the approval of the Insurance Commissioners was being sought for the Post Office medical system, and they were told that if such approval were not forthcoming insured Post Office servants would be limited in their choice of medical

attendants to the doctors on the panels. In the circular of Jan. 13th medical officers were informed that the Insurance Commissioners were prepared to approve the Post Office medical system. I see no contradiction between the two circulars. The answer to the last two parts of the question is in the negative.

THURSDAY, JAN. 23RD.

Friendly Societies and National Insurance.

Lord NINIAN CRICHTON-STUART asked the Secretary to the Treasury (1) whether he was aware that there were a number of members of Friendly Societies who were permanently sick persons and who received sick pay varying from 2s. to 5s. per week; whether these persons were ineligible for State insurance; and whether they were now deprived of the medical benefit that they had hitherto enjoyed; and (2) whether permanently sick persons who were members of Friendly Societies would now have to pay a medical fee on an increased scale to that which they had paid before the National Insurance Bill came into force; and, if so, would the State in any way help those members to pay the increased fee.—Mr. MASTERMAN said in reply: I have no evidence to show that the fact that doctors on the panels are receiving a larger remuneration than hitherto in respect of insured persons is necessitating an expenditure upon uninsured persons of a much higher fee than that for which they have been treated in the past.

Lord NINIAN CRICHTON-STUART asked the right honourable gentleman whether jobbing men and small shopkeepers, who were members of Friendly Societies and not compulsorily insured persons, would now be deprived of medical benefit at the same fee as paid by them before the National Insurance Act came into force.—Mr. MASTERMAN replied: If the persons to whom the honourable member refers have become voluntary contributors under the Insurance Act, they will receive medical benefit under the ordinary arrangements made by the Insurance Committee for other insured persons. If they do not become insured under the Act, its provisions do not affect them, and they are free to make such arrangements for medical attendance as they chose either individually or through societies.

Medical Benefit Funds.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether he could state what would be the total sum of money available for medical benefit, and particularly for the payment of medical men on the various panels, for the six months from Jan. 15th till July 15th of this year.—Mr. MASTERMAN said in reply: The whole of the National Health Insurance Fund is available for the payment of benefits, including medical benefit, and the fund is much more than adequate for any possible claims upon it within the period named.

Sir PHILIP MAGNUS: Is the right honourable gentleman able to tell the exact amount of money that will be available?—Mr. MASTERMAN: Medical benefit will be charged on the National Insurance Fund. I think we have already got £10,000,000, and probably we will have more by next June.

Medical Practice in the Highlands.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury (1) whether he was aware that, on an average being taken of a Highland doctor's practice, it had been found to work out at four miles per patient per annum, and whether he expected doctors to work the National Insurance Act at a loss, especially when, in the weather at present prevailing, they had to hire double-teamed conveyances to get them through the snow; (2) whether he was aware that unrest among and hardship to doctors was being caused in Highland districts by no decision being given as to mileage; that they went on to the panel provisionally on the understanding that mileage would be given by the Local Committee, and were now informed that no arrangement had yet been made; what did the Treasury intend to do; to what amount and when; and would the allowance be antedated to Jan. 15th?—Mr. MASTERMAN replied: The whole question of medical attendance in the Highlands and Islands has been the subject of investigation by a committee which reported about a fortnight ago. That report and the general question of mileage in sparsely populated districts is now under consideration, and I hope to be able to make an announcement at an early date.

The Marquis of TULLIBARDINE: Will the right honourable gentleman not undertake to make the mileage retrospective and so far allay a good deal of trouble, and is it fair to expect a doctor, often in bad circumstances, to lose over the Insurance Act?—Mr. MASTERMAN: I should like to be able to do this, but I cannot promise anything at present.

Mr. KING: Are medical men raising their fees to ordinary patients there, as they are in many cases in England?—Mr. MASTERMAN: I have no knowledge of that.

Mr. MUNRO asked the Prime Minister at what time approximately the Government's intentions with regard to the recent report on the medical service in the Highlands and Islands of Scotland would be announced.—Mr. ASQUITH replied: I am afraid I cannot say.

The Supply of Drugs to Insured Persons in Scotland.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury whether he was aware that in Scotland a special cheap line of drugs and bandages was being manufactured wholesale for the use of retail chemists on the National Insurance Act panel, and that chemists had to stock goods much inferior to those they had been accustomed to deal in; and whether he would give directions that thoroughly good materials only would be used.—Mr. MASTERMAN answered: So far as I am aware there is no foundation for the suggestion in the first part of the question. Every chemist is required by the terms of his agreement with the Insurance Committees to supply drugs of good quality. It is the duty of every Insurance Committee to see that this condition is strictly observed, and if the noble lord can inform me of any instance in which drugs of inferior quality are being supplied to insured persons by chemists on the panel I will immediately communicate with the Insurance Committee concerned.

The Marquis of TULLIBARDINE: Is the right honourable gentleman not aware that there is a special quality of articles now being sold under the description, "Insurance quality," such as bandages, two yards shorter than usual, and that lint of less than the usual quality is being supplied?

Mr. MASTERMAN: That statement is similar to a good many that have been made.

The Marquis of TULLIBARDINE (producing a bandage): May I show the right honourable gentleman a specimen?

Cost of Sanatoriums in Ireland.

Mr. SWIFT MCNEILL asked the Chief Secretary to the Lord Lieutenant of Ireland whether the statement recently made by one of the Local Government Board inspectors at a meeting of the Tyrone county council, to the effect that a sanatorium for 25 or 30 patients could be erected at a cost of about £1200, was to be taken as referring only to the cost of the actual structure, without including such necessary items as water-supply, drainage, lighting, heating, equipment, and so forth; and, if so, would he authorise an explanation to that effect, in view of the fact that the above-mentioned statement had caused doubt and dissatisfaction on the part of various county councils, because of the impression which that statement had created that the scale of charges which they had agreed to for insured patients at existing sanatoriums was higher than it ought to have been.—Mr. BIRRELL said in reply: The Local Government Board have communicated with their medical inspector of the district, and he states that he has no recollection of having made such a statement as that indicated in the question. The Board and their inspectors have always recognised that a sanatorium, complete in all its details, could not be erected at such a low figure as £40 a bed.

Incomplete Panels.

Mr. BOWERMAN asked the Secretary to the Treasury whether, where a panel of doctors was incomplete, it was the intention of the Insurance Commissioners to allow practitioners who had their names on the panel to undertake to engage a sufficient number of assistants so that the incomplete panel might become a complete one, and then to close the panel, or whether it was intended never to close panels, so that it might always be open to doctors to enter their names.—Mr. MASTERMAN wrote in reply: The course suggested in the first part of the question might be adopted in any area where the panel was inadequate and where, therefore, other arrangements had to be made under the proviso to Section 15 (2) of the National Insurance Act. But, as a matter of fact, it has not yet been adopted in any case. Where the panel is adequate it is always open to any duly qualified medical practitioner to join it.

MONDAY, JAN. 27TH.

The Payment of Panel Practitioners.

Mr. NEWMAN asked the Secretary to the Treasury whether the yearly remuneration or allowance due to a medical practitioner under any regulation made by the Insurance Commission in respect of any insured person who might apply and be accepted by him to be entered on his list was held to date from Jan. 15th, from the date on which the medical practitioner agreed to accept such insured person, or from the date on which he first professionally was required to attend on such person.—Mr. MASTERMAN said in reply: The payment is due in respect of the period commencing Jan. 15th, or whatever later date the medical man joined the panel.

Selection of Medical Men under the National Insurance Act.

Mr. NEWMAN asked the Secretary to the Treasury whether he was aware that a majority of insured persons had failed to take steps to be placed on the list of any approved medical practitioner on the panel in their district, and that their failure to do so would be attended with discomfort and danger to themselves in the event of sudden illness or other emergency and inconvenience to the medical practitioners on the panel; and whether the Insurance Commissioners would direct the Local Committees to notify insured persons of the obligation imposed on them to forthwith apply to be placed on the list of a medical practitioner on their local panel.—Mr. MASTERMAN answered: I have no information to suggest that insured persons are not taking the necessary steps to select a doctor from the panel who will attend them in case of illness. Indeed, all the evidence in my possession shows that not only the sick but persons in good health have come with quite unexpected alacrity to have their names registered by panel doctors to be their patients in event of future possible illness.

Migratory Insured Persons.

Mr. JOHN WARD asked the Secretary to the Treasury to state how the Insurance Commissioners proposed to allocate to the rural districts where they temporarily resided the medical contribution of an insured workman who changed his place of abode on an average of four or five times in a quarter; and would the Approved Society have to notify the change of residence each time to the Local Insurance Committees, or would it be sufficient to notify only that Local Insurance Committee where the approved member resided at the beginning of each quarter?—Mr. MASTERMAN replied: Arrangements for the necessary notifications and adjustments of contributions in the special class of cases referred to by my honourable friend are now being completed, and I will communicate with him at the earliest possible date.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury whether an insured person who was engaged in a musical comedy company on tour in the country could obtain medical benefit; whether he was entitled to call on any panel doctor in any part of the country to treat him without payment; and how was such doctor to be paid.—Mr. MASTERMAN answered: Provisions are being made under the medical arrangements whereby persons changing their residence within the year are able to change their doctors on giving notice to the Insurance Committee of the area to which they are moving. Where insured persons belonged to a profession which is constantly moving from one place to another, and staying in each for a very short time, they would appear to be among those to whom Section 15 (3) contemplates that permission might, in view of their special circumstances, be given to make their own arrangements for medical attendance and treatment, and to receive a contribution towards the cost of the same.

Medical Members of Insurance Committees.

Sir J. D. REES asked the Secretary to the Treasury whether he was aware that, though the Rochdale Insurance Committee had been in existence for several weeks and medical benefit had actually been in operation for upwards of one week, the Commissioners had not yet issued the regulations necessary for the due election of the medical members of the Insurance Committee; and, if so, what explanation he could give of an omission so unsatisfactory to the medical profession.—Mr. MASTERMAN said in reply: When the Rochdale Insurance Committee was constituted, like the other Insurance Committees, in May last the British Medical Association was invited to obtain from the medical profession throughout the country the names of medical practitioners suitable for appointment as representing the profession in

each area, in the same way as central organisations, representing Approved Societies, obtained names of their representatives throughout the country. The Association declined this offer, and in the ordinary course no new appointments would be made until new committees are appointed. The Commissioners have, however, decided to allow representation on the present committees and are arranging for the election, at the earliest possible date, of direct representatives of the profession on various committees, and also for the appointment of medical members of the committees by the county and county borough councils and the Insurance Commissioners.

The London Panel.

Answering Sir J. D. REES, Mr. MASTERMAN said: A revised list, which will include over 300 additional names of medical practitioners who have applied to be put on the London panel since the publication of the first list, will be issued this week.

Canvassing Insured Persons.

Mr. ORDE-POWLETT asked the Secretary to the Treasury whether he was aware that an official of an assurance company was advising insured persons to select one particular doctor; that it was only after repeated inquiries that he admitted that they could choose for themselves; whether such a proceeding was in accordance with the Regulations of the Insurance Commissioners; and whether he had sanctioned such a practice.—Mr. MASTERMAN answered: If a case were substantiated of an insured person being deliberately misled into thinking his choice of a doctor on the panel was in any way fettered, the Commissioners would take a serious view of such conduct, and would take the appropriate action with regard to all persons found to be responsible for it.

The Supply of Drugs under the National Insurance Act.

Mr. BRIDGEMAN asked the Secretary to the Treasury whether in the case of a practitioner on the panel supplying his own drugs, Regulation 47 only assured to him a capitation fee of three-seventeenths of the amount available for medical benefit; and if, under these circumstances, the total capitation fee might not exceed 8*s.* 6*d.*—Mr. MASTERMAN replied: The medical practitioners in the circumstances stated would receive three-seventeenths in respect of drugs and fourteen-seventeenths in respect of medical attendance and treatment, making a total capitation fee of 8*s.* 6*d.* In addition each would receive his proportionate share of the sum equal to 6*d.* per head per annum of all insured persons entitled to obtain medical attendance from practitioners on the panel in respect of the domiciliary treatment of insured persons suffering from tuberculosis, making a total of 9*s.* in all.

Hospitals and Insured Persons.

Mr. GRANT asked the Secretary to the Treasury to state what practical steps beyond making inquiries he had caused to be taken to give immediate alleviation or mitigation of the suffering that members of Approved Societies were actually undergoing through being deprived of the continuance of their treatment at hospitals, such treatment being unfinished, and who, moreover, were prevented from obtaining treatment from doctors on the panels on account of the non-issue by Approved Societies of the membership tickets to which these insured individuals were entitled; and would he say whether his attention had been already called to such cases.—Mr. MASTERMAN replied: I am not aware of any cases in which Approved Societies have failed to issue medical tickets to their members who are entitled to them or that hospitals are refusing to give treatment to persons who are not in a position to apply for it under the Act on the ground that they are insured.

The Clerical Work of Panel Medical Men.

Major GASTRELL asked the Secretary to the Treasury whether his attention had been called to the circumstances of the death of Frederick Richard Townsend, an insured person under the National Insurance Act, and to the verdict of the jury who inquired into the cause of death, when the jury referred to the scandalous amount of clerical work required of a panel doctor, and the coroner in summing-up said that the man's life ought to have been saved if the doctor, owing to his work, had not been prevented from examining the case; and what steps would be taken for limiting the number of insured persons any one doctor might agree to treat.—Mr. MASTERMAN said in reply: I am informed that the London Insurance Committee are conducting an inquiry into the allegations made at the inquest in the case referred to, that the amount of work imposed upon the doctor in attendance upon the patient by the Insurance Act, the regulations made thereunder, and the arrangements of the Insurance Committee, were such as to preclude the doctor from a proper examination of or attendance upon his patients. Until this inquiry is completed it would be improper for me to make any statement on the subject.

Major GASTRELL: Is the right honourable gentleman aware that claimants are kept waiting daily for two hours in the streets of London while seeking to gain admission to medical men, and will he endeavour to provide some temporary shelter for such persons until the necessary number of doctors to attend on the insured sick persons is secured?—Mr. MASTERMAN: I am not aware of any such facts. There are far more doctors on the London panel than are necessary to meet existing needs.

TUESDAY, JAN. 28TH.

Sanatorium Benefit in Gloucestershire.

Mr. CHARLES BATHURST asked the Chancellor of the Exchequer whether, on the basis of his estimate that the number of insured persons and their dependents would probably include more than four-fifths of the total number of persons suffering from tuberculosis in the country, he realised that in Gloucestershire during the first six months of sanatorium benefit 53 per cent. of such cases would be amongst insured persons and 27 per cent. amongst dependents; whether, seeing that on the basis of the Astor report, one sanatorium bed and one hospital bed would be required for every 5000 of the population, 66 sanatorium beds and 66 hospital beds would be required for this purpose in Gloucestershire, 52 of each for insured persons and their dependents, and 35 of each for insured persons only, and that allowing for the provision in addition of nine dispensaries only the estimated annual expenditure would be £7366, whereas the 8*d.* available for institutional treatment of insured persons was estimated to produce £3433 only, leaving £3933 to be found from other sources for insured persons alone, or including dependents £6679, or including the whole community £8738; and whether, in view of the unwillingness of the already overburdened ratepayers and their representatives to provide out of the rates the sum of £4369, a moiety of the above amount, he would be willing, in order that the work might not be carried out piecemeal, but that this problem might be attacked as a whole, to provide a larger proportion than hitherto promised of the above deficit by way of an increased Exchequer grant.—Mr. LLOYD GEORGE said in reply: I hope to see a deputation of the County Councils Association at an early date with regard to schemes for the treatment of tuberculosis throughout the country. In the meantime I do not think that I can undertake, within the limits of a Parliamentary answer, an argument as to the detailed financial proposals of one county.

Mr. CHARLES BATHURST asked the right honourable gentleman whether he was aware that the Insurance Committee for the county of Gloucester originally decided to provide for their tuberculous population 19 dispensaries at an average distance of 10 miles, so that such institutions might be reasonably accessible to all requiring advice and simple treatment, but that when 6*d.* per head was deducted from the original 1*s.* 3*d.* as representing domiciliary treatment under the arrangements for medical benefit, the number of dispensaries was reduced to nine only, the average area of such dispensary district being now 137 square miles; and whether he can state what was the area which each such dispensary ought to be made to serve.—Mr. LLOYD GEORGE answered: The provision of dispensaries is a matter for the county council and not for the Insurance Committee. I am not aware that such a scheme as that referred to has been put forward, but even the number of dispensaries stated in the question to be now contemplated would seem to bear a very high proportion to the population as compared with the recommendations of the Astor report.

Difficulty in Choice of a Medical Man.

Sir GILBERT PARKER asked the Secretary to the Treasury, in the case of a young man whose home was in Chatham and whose occupation was in Gravesend, where he lived in rooms for the greater part of each week, from which place would he secure his medical aid if taken ill; or would he have the right to claim medical attendance in both Chatham and Gravesend, and secure a doctor from the panel in either place.—Mr. MASTERMAN replied: The insured person in question could choose a doctor from the Kent panel either in the neighbourhood of Gravesend or in that of Chatham. He could not be assigned to two panel doctors at the same time. If after choosing a doctor in one of the districts he could no longer obtain his services, he could notify the committee, whose duty it would then be to make arrangements for his attendance by another medical man.

Sir ARTHUR GRIFFITH-BOSCAWEN asked the Secretary to the Treasury to state whether domestic servants who were employed in two separate residences by the same employer at different times of the year were entitled to free medical attendance in each area under the National Insurance Act; and whether they were entitled to select a doctor from two separate panels.—Mr. MASTERMAN said in reply: Certainly, sir. A domestic servant who at different times of the year resides in different areas, by giving notice on changing her residence to the Insurance Committee of the area to which she is going will be able to select a doctor on the panel in the second area.

The Medical Staff of the Board of Trade.

Mr. PETO asked the President of the Board of Trade whether the present medical staff of the Board of Trade was so inadequate that its duties were almost wholly confined to the inspection of emigrants travelling on emigrant-carrying ships; and, if so, would he say what action he proposed to take in the matter.—Mr. BUXTON wrote in reply: The medical officers of the Board of Trade are appointed to perform certain specific duties under the Merchant Shipping Acts, including the inspection of emigrants. I have no reason to think that the staff is inadequate to perform those particular duties.

WEDNESDAY, JAN. 29TH.

The Clerical Work of Panel Medical Men.

Mr. TELL asked the Secretary to the Treasury whether the Insurance Commissioners had received complaints from doctors on the panels that an excessive and unnecessary amount of their time was taken up in filling up forms and returns, and doing other clerical work to the detriment of their useful medical work, and whether steps would be taken to diminish this clerical work and arrange for it to be carried out in some other manner.—Mr. MASTERMAN replied: The Insurance Commissioners are anxious to receive any suggestions from doctors on the panel for simplication or improvement of the methods of keeping records and returns, which their experience may show to be desirable, and inquiries are being made by officials of the Commission from doctors on the panel in various districts as to their experience of work under the Act. Such suggestions as are being obtained either by inquiry or correspondence are receiving the careful consideration of the Commissioners.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND COMPANY, LIMITED, 44 and 45, Rathbone-place London, W.

Experimental Psychology and Pedagogy. For Teachers, Normal Colleges, and Universities. By R. Schulze. Translated by Rudolf Pintner, M.A. Edin., Ph.D. Leipzig, Professor of Psychology and Education at the University of Toledo, Ohio. Price 15*s.* net.

Germanic Philology. By Dr. Richard Loewe. Translated and edited by J. D. Jones, Ph.D. Berlin, B.A. Lond., Lecturer in English in the University of Sheffield. Price 4*s.* 6*d.* net.

AMERICAN LARYNGOLOGICAL ASSOCIATION, New York (Secretary: Dr. Hannon Smith, 44, West Forty-ninth-street, New York City).

Transactions of the Thirty-fourth Annual Meeting of the American Laryngological Association held at Atlantic City, N.J., May 9th, 10th, and 11th, 1912. Price not stated.

BAILLIÈRE, J. B., ET FILS, Paris.

Bibliothèque de Thérapeutique, publiée sous la Direction de A. Gilbert et P. Carnot. Thérapeutique des Maladies Infectieuses. Par les Docteurs M. Garnier, Médecin des Hôpitaux de Paris, Nobécourt, Professeur agrégé à la Faculté de Médecine de Paris, Noc, Médecin Major du Service de Santé des Troupes Coloniales, et P. Lereboullet, Médecin des Hôpitaux de Paris. Price Fr.12.

BAILLIÈRE, TINDALL, AND COX, London.

Winter in Algiers. By Alfred S. Gubb, M.D. Price not stated.

CHURCHILL, J. AND A., London.

Notes on Chemical Research. An Account of Certain Conditions which apply to Original Investigation. By W. P. Dreaper, F.I.C., F.C.S., Member of Council of Institute of Chemistry; Editor of "The Chemical World," &c. Reprinted from "The Chemical World." Price 2s. 6d. net.

Guy's Hospital Reports. Edited by F. J. Steward, M.S., and Herbert French, M.D. Vol. LXVI. Being LI. of the Third Series. Price not stated.

CONNELL AND BAILEY, LIMITED, St. Peter's Square, Stockport. ST. JOHN AMBULANCE ASSOCIATION, London.

How to Act in Cases of Emergency. Aids to Memory for "First Aid" Students. By L. M. Frank Christian, M.B., C.M. Edin. Fifth edition. Strictly revised to date. Price 6d. net; by post, 7d.

ENGELMANN, WILHELM, Leipzig.

Terminologie der Entwicklungsmechanik der Tiere und Pflanzen. In Verbindung mit C. Correns, Prof. der Botanik in Münster, Alfred Fischel, Prof. der Anatomie in Prag, E. Küster, Prof. der Botanik in Bonn. Herausgegeben von Professor Wilhelm Roux. Price, bound, M.10.

HUDSON AND SON, Edmund-street and Livery-street, Birmingham.

Stammering: The Beasley Treatment. By W. J. Ketley. Price not stated.

INTERNATIONALE VEREINIGUNG GEGEN DIE TUBERCULOSE, Berlin-Charlottenburg.

Zehnte Internationale Tuberculose-Konferenz, Rom, 10-14 April, 1912. (Tenth International Tuberculosis Conference.) Bericht-Rapport-Report (in German, French, and English). By Order of the Board of Management of the International Anti-Tuberculosis Association. Edited by the Secretary General, Prof. Dr. Pannwitz. Price not stated.

KETTNERS, LIMITED, Church-street, London, W.

Kettner's Book of the Table. A Manual of Cookery. Practical, Theoretical, Historical. Original edition, 1877. Reprinted, 1912. Price not stated.

KIMPTON, HENRY, London. STENHOUSE, ALEXANDER, Glasgow.

A Practical Manual of Venereal and Generative Diseases, Spermatorrhœa, Impotence, and Sterility in Both Sexes. By Gerald Dalton, late Assistant Surgeon to St. Francis's Hospital, and Lecturer to Nursing Staff; Assistant to Skin Department, Charing Cross Hospital. Price 4s. net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

The Conservation of the Child. A Manual of Clinical Psychology presenting the Examination and Treatment of Backward Children. By Arthur Holmes, Ph.D., Assistant Director of the Psychological Clinic; Assistant Professor of Psychology, University of Pennsylvania. Price 4s. 6d. net.

Building a Profitable Practice. Being a Text-book on Medical Economics. By Thomas F. Reilly, M.S., M.D., Professor of Applied Therapeutics, Medical Department, Fordham University, New York City. Price 10s. 6d. net.

LONGMANS, GREEN AND CO., London, New York, Bombay, and Calcutta.

Researches in Colour Vision and the Trichromatic Theory. By Sir William de W. Abney, K.C.B., D.Sc., D.C.L., F.R.S. Price 21s. net.

ST. JOHN AMBULANCE ASSOCIATION, St. John's Gate, Clerkenwell, London, E.C.

Problems in First Aid. A Companion to the Authorised Text-book of the St. John Ambulance Association, on First Aid to the Injured. By L. M. Frank Christian, M.B., C.M. Edin., and William R. Edwards, A.C.A. Price 6d., post free.

SUPERINTENDENT GOVERNMENT PRINTING, INDIA, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India:—

No. 54. Studies on the Mouth Parts and Sucking Apparatus in the Blood-Sucking Diptera. No. 1, Philæmatomyia Insignis, Austen. By Captain F. W. Cragg, M.D., I.M.S. Price 13 annas or 1s. 3d.

No. 55. The Structure of Hæmatopota Pluvialis (Meigen). By Captain F. W. Cragg, M.D., I.M.S. Price Rs. 1.2 or 1s. 9d.

No. 56. Malaria in the Andamans. By Major S. R. Christophers, M.B., I.M.S., Assistant to the Director, Central Research Institute, Kasauli. Price 14 annas or 1s. 4d.

UNIVERSITY PRESS, Cambridge.

Heredity and Memory. By James Ward, Sc.D., Professor of Mental Philosophy in the University of Cambridge. Being the Henry Sidgwick Memorial Lecture delivered at Newnham College, 9th November, 1912. Price 1s. 6d. net.

WATTS AND CO., 17, Johnson's Court, Fleet-street, London, E.C.

The Origin of Life: Being an Account of Experiments with Certain Superheated Saline Solutions in Hermetically Sealed Vessels. By H. Charlton Bastian, M.D., F.R.S., Emeritus Professor of the Principles and Practice of Medicine, University College, London. Second edition, with an important Appendix and two Additional Plates. Price 3s. 6d. net.

WERNER UND HÖRNIG (Inhaber: Otto Lychenheim), Lübeck.

Heilbehandlung von Versicherten und Fürsorge für Invalide bei der Landesversicherungsanstalt der Hansestädte im Jahre, 1911. Price not stated.

WHITAKER, J., AND SONS, LIMITED, 12, Warwick-lane, Paternoster-row, London, E.C., and 225, Fifth-avenue (Brunswick Building), New York.

The International Whitaker. A Statistical, Historical, Geographical, and Commercial Handbook for all Nations. Price 2s. net.

Whitaker's Almanack. 1913. By Joseph Whitaker, F.S.A. Price 2s. 6d.

Whitaker's Peerage, Baronetage, Knightage, and Companionage for the Year 1913. Price 5s. net.

WILEY, JOHN, AND SONS, New York. CHAPMAN AND HALL, LIMITED, London.

Steam Economy in the Sugar Factory. By Karl Abraham, Civil Engineer. Translated from the German Edition by E. J. Bayle, General Engineer, American Beet Sugar Factory. First edition. Price 6s. 6d. net.

WRIGHT AND POTTER PRINTING CO., 18, Post Office-square, Boston.

Forty-third Annual Report of the State Board of Health of Massachusetts. Price not stated.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Notes on the Treatment of Tuberculosis (Preventive and Curative). By John Laird, L.R.C.P. & S. Irel. Price 2s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADDISON, Mrs. K., M.B., B.S., has been appointed Clinical Assistant to the Skin Department of the Royal Free Hospital.

BOUSFIELD, Miss F. R., M.B., B.S., has been appointed Assistant Anæsthetist to the Royal Free Hospital.

BRASH, EDWARD A., L.R.C.P. Lond., M.R.C.S., has been appointed Consulting Surgeon to the Exeter Lying-in Charity.

CROOKSHANK, F. G., M.D. Lond., M.R.C.P. Lond., has been appointed Physician to Out-patients at the Hampstead General and North-West London Hospital.

CULROSS, JAMES, M.B., C.M. Glasg., has been reappointed Medical Officer to the Newton Abbot Hospital.

GOULDEN, H. E., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the Exeter Tuberculosis Dispensary.

GRIMBLY, RICHARD H., M.R.C.S., L.S.A., has been reappointed Medical Officer to the Newton Abbot Hospital.

HARNETT, WILLIAM GEORGE, M.D. Dub., has been appointed Divisional Surgeon to the Metropolitan Police at Barnet.

HARRIS, J. DELPRATT, M.D. Durh., M.R.C.S., L.S.A., has been appointed Consulting Surgeon to the Exeter Lying-in Charity.

HAYDON, EDGAR, M.B., C.M. Glasg., has been reappointed Medical Officer to the Newton Abbot Hospital.

HUNT, Miss M., M.D., B.S. Lond., D.P.H. Camb., has been appointed Clinical Assistant to the Royal Free Hospital.

HUTCHINSON, R. C., M.B., Ch.B. Vict., has been appointed Tuberculosis Physician for Cardiganshire and Carmarthenshire, under the Welsh National Memorial.

LINDSEY, COLIN DUNROD, M.D. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Physician to the South Devon and East Cornwall Hospital, Plymouth.

MCKENZIE, H. VALENTINE, M.D., C.M. Edin., has been appointed Ophthalmic Surgeon to the Newton Abbot Hospital.

MORRISON, F. S., F.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Medbourne District of the county of Leicester.

NISBET, A. THOMSON, M.D., C.M. Glasg., has been reappointed Medical Officer to the Newton Abbot Hospital.

PATEY, WALTER, M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer to the Newton Abbot Hospital.

PEREIRA, J. A. WENCESLAUS, M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Exeter Lying-in Charity.

POOLEY, G. H., F.R.C.S. Eng. & Edin., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuits Nos. 13 and 16, with a view to his being employed in Ophthalmic cases arising in those Circuits.

PRATT, Lieutenant-Colonel J. J., I.M.S. (retired), has been appointed Lecturer on Tropical Diseases at the Westminster Hospital Medical School.

SAYRES, A. W. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Stonehouse Tuberculosis Dispensary.

SCHOLEFIELD, E. H., M.B., B.S. Oxon., has been appointed Medical Officer to the Barnstaple Tuberculosis Dispensary.

SCOTT, W. GIFFORD, M.B., C.M. Edin., L.R.C.S. Edin., has been reappointed Medical Officer to the Newton Abbot Hospital.

SCRASE, J. J. SHEAT, L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer to the Newton Abbot Hospital.

STEPHENS, J. W. W., M.D. Cantab., has been appointed to the Sir Alfred Jones Chair of Tropical Medicine in the University of Liverpool.

WALLACE, A. J., M.D., C.M. Edin., has been appointed Honorary Consulting Gynæcologist to the Royal Southern Hospital, Liverpool.

WESTMACOTT, FREDERIC H., F.R.C.S. Eng., has been appointed Assistant Surgical Officer to the Aural Department at the Manchester Royal Infirmary.

WHEELER-O'BRYEN, J., M.D. Vermont, L.R.C.P. & S., L.M. Edin., L.A.H. Dub., has been appointed District Medical Officer and Public Vaccinator for Sydenham.

WILLIAMS, E. U., M.R.C.S., L.R.C.P. Lond., has been appointed Radiographer and Medical Electrician to the Royal Free Hospital.

WILLIAMS, H., M.B., B.C. Edin., F.R.C.S. Edin., has been appointed Honorary Assistant Surgeon to the Royal Southern Hospital, Liverpool.

WOODALL, A. E., M.D. Vict., has been appointed Medical Officer at the Central Branch of the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AGRA, DUFFERIN HOSPITALS. — Female Doctor. Salary Rs.300 a month, with free quarters.

AYLESBURY, BUCKS COUNTY LUNATIC ASYLUM, Stone.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board and apartments.

BERKSHIRE COUNTY COUNCIL.—Tuberculosis Officer. Salary £500 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £75 per annum, with board, rooms, and laundry allowance.

BIRMINGHAM, QUEEN'S HOSPITAL.—Radiographer. Salary £100 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at rate of £50 per annum, with board, apartments, and laundry. Also Dental House Surgeon. Salary £100 per annum, with board, apartments, and laundry. Also House Physician. Salary £100 per annum, with board, apartments, and laundry. Also Obstetric and Ophthalmic House Surgeon. Salary £75 per annum, with board, apartments, and laundry. Also Honorary Surgeon, and, if necessary, Honorary Assistant Surgeon.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £30 per annum, with board, residence, and laundry.

CAMBRIDGE, COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £160 per annum, with board, lodging, washing, and attendance.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CARSHALTON, SURREY, QUEEN MARY'S HOSPITAL FOR CHILDREN.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £30 per annum.

COLCHESTER, SEVERALLS ASYLUM.—Senior Assistant Medical Officer. Salary £300 per annum, with apartments, board, attendance, and washing.

CROYDON COUNTY BOROUGH.—Medical Officer to the Tuberculosis Dispensary. Salary £450 per annum.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, attendance, and laundry.

DEVON, COUNTY OF.—Assistant School Medical Officer. Salary £250 per annum.

ESSEX EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Third Physician.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, residence, and washing.

GROSVENOR HOSPITAL FOR WOMEN, Vincent-square, Westminster.—Assistant Surgeon for Out-patients.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL. — House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £175 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton. —Physician. Also Assistant Physician.

HUDDERSFIELD ROYAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex. — Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

LAMBETH, METROPOLITAN BOROUGH OF.—Assistant Tuberculosis Officer. Salary £300 per annum.

LEEDS, CITY OF.—Assistant Medical Officer of Health and Chief Inspector of Nuisances. Salary £300 per annum.

LEEDS PUBLIC DISPENSARY.—Honorary Assistant Dental Surgeon.

LEICESTERSHIRE AND RUTLAND ASYLUM, Narborough.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

LEICESTERSHIRE COUNTY COUNCIL.—Tuberculosis Medical Officer. Salary at rate of £500 per annum.

LIVERPOOL, CITY OF.—Assistant Tuberculosis Officer. Salary at rate of £400 per annum.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Mount Pleasant, Liverpool.—Honorary Assistant Physician.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Surgeon. Salary at rate of £60 per annum, with board and lodging.

LONDON COUNTY COUNCIL.—Two Medical Assistants in the Public Health Department. Salary £400 per annum. Also Quarter-time Temporary Medical Assistant. Salary £150 per annum.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £30 per annum, with board and residence.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for Crossley Sanatorium, Delamere Forest, Cheshire. Salary £100 per annum, with board, apartments, and laundry.

MANSFIELD AND MANSFIELD WOODHOUSE DISTRICT HOSPITAL.—Resident House Surgeon, unmarried. Salary £120 per annum, with board, residence, and washing.

NATIONAL DENTAL HOSPITAL, Great Portland-street, W.—Medical Superintendent. Salary £120 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Honorary Dental Surgeon.

NAVY MEDICAL DEPARTMENT.—Six Dental Surgeons for duty with Naval Forces in the United Kingdom. Salary £1 per diem.

NORTHAMPTON, ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES.—Resident Medical Superintendent. Salary £1200 per annum, with unfurnished residence, &c.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Also Assistant Resident Surgeon for Branch. Salary in each case £170 per annum, with apartments, attendance, light, and fuel.

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £150 per annum, with apartments, board, washing, and attendance.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty House Surgeon, also House Surgeon, both unmarried, each for six months. Salary in each case at rate of £80 per annum, with board, &c.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and washing.

RICHMOND, SURREY, ROYAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board and apartments.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Junior Obstetric Assistant. Lodging and washing, but no salary.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Second Resident House Surgeon, unmarried, for six months. Salary at rate of £100 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Junior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, lodging, and washing.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—Two Clinical Assistants.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion-square, W.C.—Honorary Surgeon. Also Clinical Assistant.

SALFORD FEVER HOSPITAL.—Junior Resident Medical Officer at Ladywell Sanatorium. Salary £150 per annum, with apartments, &c.

STAFFORD, COTON HILL MENTAL HOSPITAL.—Assistant Medical Officer, unmarried. Salary £160 per annum, with residence, board, and laundry.

STAFFORD, STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £210 per annum, with apartments, board, and washing.

STOCKPORT INFIRMARY.—Senior House Surgeon. Salary £120 per annum, with board, washing, and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Physician. Salary £100 per annum, with apartments, board, and washing. Also Honorary Surgeon to Ear and Throat Department.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

SUNDERLAND, ROYAL INFIRMARY.—House Physician for six months. Salary £80 per annum, with board, residence, and laundry.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Physician.

WESTON-SUPER-MARE, ROYAL WEST OF ENGLAND SANATORIUM.—Resident Secretary-Superintendent, unmarried. Salary £200 per annum, with board and laundry.

WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer, Salary £150 per annum, with unfurnished house, free of rent and rates.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Pathologist and Bacteriologist. Salary £200 per annum.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

YORK RETREAT, HOSPITAL FOR THE TREATMENT OF MENTAL DISEASES.—Female Junior Assistant Resident Medical Officer. Salary £175 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Monasterevan, in the county of Kildare.

Births, Marriages, and Deaths.

BIRTHS.

COLBRAN.—On Jan. 21st, at Hatfield, Waterden, Guildford, the wife of C. Leslie Colbran, L.D.S. Eng., of a daughter.

MACEVOY.—On Jan. 24th, at Mowbray-road, Brondesbury, N.W., the wife of H. J. Macevoy, M.D., B.Sc. Lond., of a son.

NATHAN.—On Jan. 28th, at Bolton Gardens, S.W., the wife of Sidney Nathan, M.D., of a son.

STEINBACH.—On Jan. 16th, at Newton House, Knaresborough, Harrogate, the wife of Horace Steinbach, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

DEATHS.

BARNETT.—On Jan. 24th, at Amherst-road, Bexhill-on-Sea, John Milford Barnett, M.D. Edin., M.R.C.S. Eng., Major H.M. Indian Army, aged 82 years.

GARNER.—On Jan. 20th, at Winckley-square, Preston, John Edward Garner, M.D., aged 60 years.

JARVIS.—On Jan. 13th, Henry Victor Jarvis, aged 9, the only child of Dr. and Mrs. Charles G. Jarvis, of 81, Boulevard Malesherbes, Paris.

LIVESAY.—On Jan. 24th, at "The Pines," Bembridge, I.W., William Livesay, M.D. Edin., in his 68th year.

WRIGHT.—On Jan. 25th, at Derwent Hill, Stamford Bridge, York, Frederick Wright, L.S.A., J.P., in his 77th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

COCKROACHES AND CANCER.

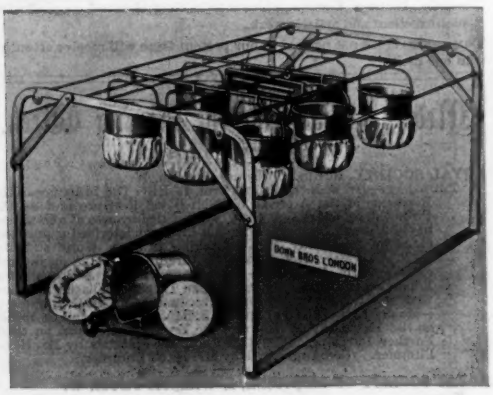
THE connexion between cockroaches and cancer does not at first sight seem very obvious, but at least two recent workers on the subject assert that such a connexion does exist. In March, 1911, we received a communication in support of this contention from Dr. W. Melville-Davison, who has, we understand, been devoting considerable attention to the question for some years. But we were led to regard his arguments as being at the time inconclusive. His views, briefly stated, are as follows. Cancer is a growth caused by the introduction, in various ways, into the body of a certain species of alga, filaments of which are found in large numbers in the bowel of several varieties of the cockroach. He contends that the infection is conveyed to man by food or by means of linen soiled by the excreta of the cockroach. The evidence adduced by Dr. Melville-Davison is not sufficient, in our opinion, to incriminate the cockroach so far as a spreader of cancer. A second investigator, Professor Fibiger, of Copenhagen, is reported in the public press to have inculpated the cockroach as playing a part in the diffusion of cancer. According to the newspaper account published, he says that a worm in the rat passes its larval stage in the intestine of the cockroach. The rat becomes infected by the worm after eating the cockroach. These worms, it is alleged, give rise to swellings in the rat, and when the tumours are examined they are found to be of a cancerous nature. It is suggested that cancer in man may be occasioned in some similar way as in the rat. It is obvious that we can hardly rely upon this press description of Professor Fibiger's work, and that before examining his contentions we must wait for a full account of his investigations. It is, however, worthy of note that two observers, independently of each other and working in different countries, have been led to incriminate the cockroach as a cancer spreader. But before a verdict of guilty can be brought in against that insect a good deal more evidence will have to be adduced.

THE NATIONAL BUREAU FOR PROMOTING THE GENERAL WELFARE OF THE DEAF.

IN the first annual report of this institution it is pointed out that, according to the report for 1910 of the Chief Medical Officer of the Board of Education, from 3 to 5 per cent. of school children suffer from defective hearing. The first school for the educational treatment of the deaf was established in London in 1792, and these agencies have multiplied until there are now in active operation in the United Kingdom 76 public and private schools for the deaf, and 64 local societies attending to the welfare of the deaf after school life. While there were plenty of sectional agencies, however, it was felt that to obtain the full benefit from their work effective linking-up was needed. Hence it came about that on June 9th, 1911, the National Bureau for Promoting the General Welfare of the Deaf was organised at the residence of Mr. Leo Bonn, who was elected its first President, and who has undertaken to bear the expense of its establishment and of its maintenance for the first two years. Its objects are threefold. First, centralisation, the coördination of all existing agencies and charities; secondly, the collection, classification, and dissemination of information; and, thirdly, the investigation of problems affecting the deaf. Many of the leading organisations for promoting the physical and social welfare, not only of the deaf, but of the community at large, are represented on its executive committee, so that the Bureau is representative of every kind of work that is being done on behalf of the deaf, and the committee also contains the names of three well-known members of the medical profession—Mr. F. E. Fremantle, Dr. J. Kerr Love and Mr. P. Macleod Yearsley. The Bureau also has representation on several of the principal societies engaged on various kinds of social work. The first year's work has naturally been largely introductory, and has consisted in the main of getting into touch with every existing agency, foreign as well as British, at work amongst the deaf, and in this it has achieved a very gratifying measure of success. Much valuable information has also been collected and rendered available for reference, and arrangements have been made with the National Association of Teachers of the Deaf to accommodate in the Bureau's offices the Association's excellent Arnold Library, the most extensive of its kind in this country. It has also answered inquiries extending over a wide range of subjects, taken part in finding employment in suitable cases, and has instituted under Dr. Kerr Love an investigation into the prevention of deafness. The offices of the Bureau are in Gwydir Chambers, 104, High Holborn, and the secretary, Mr. W. Carey Roe, will be glad to give further information to those interested in its work.

AN IMPROVED ICE-CRADLE.

OUR attention has been called to an improved ice-cradle suggested by Miss K. C. Braidwood, matron of the Infectious Hospital, Mylands, Colchester. In this form of apparatus it is claimed that certain drawbacks inseparable from the forms of ice-cradle hitherto available are entirely obviated, while the "improved cradle" affords a most simple and effectual means of reducing the body temperature in enteric fever and in other cases, with the following advantages to nurse and patient respectively: (1) Convenience in carriage and storage, the cradle folding flat when not in use; (2) avoidance of all discomfort to the patient, who also need not be moved; (3) economy of time and labour, as compared with that involved in other methods, such as baths and packs; and (4) it can be easily managed by one nurse. The apparatus consists of a light folding body cradle, to the top frame of which are attached a thermometer and set of nine ice-pails, the bases of which are enveloped in flannel caps, which, by absorbing the moisture due to condensation, effectually prevent dripping. The pails can be detached singly or otherwise, and the number in use at any time thus regulated to the requirements of the case. The method of use is as



follows. The patient wears a long flannel gown and bed socks, or is covered with a thin blanket and has a water-bottle at the feet, the cradle is placed over the patient, well up over the trunk, and the pails and thermometer put in position. Two blankets are arranged over the cradle to open in the middle, so that no inrush of air shall accompany inspection of the cradle thermometer. As the patient's temperature falls, one or more pails are taken out so as to avoid any chill. In practice the cradle has been put on when the patient has a temperature of 102° F. and removed at 101°. With the temperature over 103° it has been found well to sponge for ten minutes before applying the cradle; this will help to bring down the temperature more quickly. The nurse in charge of the apparatus notes the cradle temperature every time the patient's temperature is taken, keeps the pails replenished (this is only the work of a moment if a bowl of chipped ice and an empty bowl into which to drain the pails are brought to the bedside), and sees that the patient does not take ice from the pails to suck.

The makers of the apparatus are Messrs. Down Brothers, Limited, St. Thomas's-street, London, S.E.

THE OUTPUT OF BOOKS, ESPECIALLY MEDICAL.

A PERUSAL of the tabulated statement of the "Year's Publishing," which appeared in the *Bookseller* of Jan. 3rd, informs us that fiction heads the list of the year's output with 2290 books, no fewer than 2024 being first issues. This pre-eminence is, of course, natural, being due to the fact that fiction alone has the whole reading population for its possible *clientèle*. It may be a surprise to many to learn that religion and theology comes next, with 934 books, of which 835 are entirely new. Leaving aside children's books (821), which are in a class entirely by themselves, it will be a comfort to those who are deploring the decay of culture to know that polite learning comes next—viz., essays and belles lettres, 895; and biography and history, with poetry and drama, 674 each (of which only 68 and 21 respectively are republications). Politics, political economy, and questions of the day follow with 621, which will be satisfactory to those who are troubled by the stirrings of the world spirit. Educational works number 522. Of the occupational class, medical and surgical works head the list with 367, of which 284 are new. This contrasts forcibly with the next group, law and parliamentary works, the total number of which is only 249. Books devoted to the use of those engaged in crafts and commercial pursuits appear in the following order: Art and architecture, 233; engineering and mechanics, 193; botany, horticulture, and agriculture, 135; chemistry and physics, 125; trade, commerce, and manufacture, 122; electricity and magnetism, 60; veterinary

science, farming, and stock-keeping, 56; banking and finance, 31; and technical handbooks, 20. The preponderance of books on medicine over those that relate, for instance, to engineering, architecture, commerce, and handicrafts, would appear to be due in part at least to the much larger extent to which the application of medical science to practice is dependent on inferences newly drawn from old principles or emanating from the discovery of new ones. This consideration supports the contention that the function of the medical profession is *sui generis*, and has no just analogue in any other occupation pursued as a means of livelihood by man.

BOVRIL PICTURES.

WE have received from Bovril, Limited, a new set of three bonus pictures. The large one, entitled "Adoration," is a framed artist's proof by F. Dvorak. The full size of the gravure is 25 × 20 inches and of the paper 37 × 32 inches. The two smaller reproductions are unframed. One, called "As Good as Ever," by Arthur J. Elsley, was exhibited at the Royal Academy last year; the other, "A September Morning," is by Sam Reid, R.S.W. These pictures are reproduced from the original oil paintings by Messrs. C. W. Faulkner and Co., Limited, London, who are to be congratulated on producing such excellent and artistic work.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Dr. S. R. Wells and Prof. L. Hill: The Influence of the Resilence of the Arterial Wall on Blood Pressure and on the Pulse Curve.—Mr. A. A. Gray: On the Occurrence of a Ganglion in the Human Temporal Bone not hitherto described (communicated by Prof. J. G. McKendrick).—Mr. J. A. Gunn and Mr. F. B. Chavasse: The Action of Adrenin on Veins (communicated by Prof. F. Gotch).—Capt. H. S. Ranken: A Preliminary Report on the Treatment of Human Trypanosomiasis and Yaws with Metallic Antimony (communicated by Mr. H. G. Plimmer).—Major W. B. Fry and Capt. H. S. Ranken: Further Researches on the Extrusion of Granules by Trypanosomes and on their Further Development. With a note on Methods by Mr. H. G. Plimmer. (Communicated by Mr. H. G. Plimmer.)

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF PATHOLOGY (Hon. Secretaries—H. R. Dean, Gordon W. Goodhart).

MEETING POSTPONED.

WEDNESDAY.

SECTION OF OPHTHALMOLOGY (Hon. Secretaries—J. Herbert Parsons, Leslie Paton): at 8 P.M.

Cases:

Mr. R. A. Greeves: Scleral Ectasia with Displacement of the Papilla.

Mr. George Coats: Congenital Mesoblastic Strand adhering to and penetrating the Cornea.

Discussion (at 8.30 P.M.):

The Physiology of the Intra-ocular Pressure.

The discussion will be continued by Mr. Martin Flack, Mr. Thompson Henderson, and Mr. J. Herbert Parsons.

THURSDAY.

SECTION OF OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—W. W. H. Tate, T. W. Eden): at 8 P.M.

Specimens:

Dr. Beckwith Whitehouse: (1) Early Sarcoma of Uterus; (2) Fibromyoma showing Unusual Characters.

Dr. Arthur E. Giles: Diffuse Ovarian Fibroma with Central Cyst.

Mrs. Mary Scharlieb, M.S.: Tumour of Doubtful Nature removed from Groin.

Short Communication:

Dr. Bright Banister: Case of Extensive Rupture of the Utero-vaginal Junction with Escape of the Placenta into the Peritoneal Cavity.

Papers:

Dr. Lorrain Smith (Edinburgh) and Dr. Fletcher Shaw (Manchester): Red Degeneration of Uterine Fibromyomata.

Dr. James Young (Edinburgh): The Cause of Internal Rotation of the Fœtal Head.

FRIDAY.

SECTION OF LARYNGOLOGY (Hon. Secretaries—Dan McKenzie, E. A. Peters): at 4.30 P.M.

Cases

Will be shown by Mr. Herbert Tilley, Mr. C. W. M. Hope, Mr. T. Bramley Layton, Mr. J. F. O'Malley, Dr. W. H. Kelson, and others.

SECTION ON ANÆSTHETICS (Hon. Secretaries—H. J. Scharlieb, C.M.G., H. E. G. Boyle): at 8.30 P.M.

Mr. H. M. Page: Nitrous Oxide and Oxygen in Major Surgery. Demonstration of Apparatus.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Mr. J. Berry: The Surgery of the Thyroid Gland, with Special Reference to Exophthalmic Goitre (illustrated by specimens and photographs on view from 8.30 P.M.) (Lettsomian Lecture.)

WEDNESDAY.—7.30 P.M., Anniversary Dinner at the Whitehall Rooms, Hotel Metropole, London.

HUNTERIAN SOCIETY.

TUESDAY.—7.15 P.M. for 7.30 P.M., Anniversary Dinner at De Keyser's Royal Hotel, London.

RÖNTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C.

TUESDAY.—8.15 P.M., Mr. R. S. Wright: The Construction of Induction Coils.—Mr. C. E. S. Phillips: Demonstration of a Simple Method for Inserting Radium into Lengths of Sterile Rubber Tubes.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Prof. K. M. Walker: Paths of Infection in Genito-urinary Tuberculosis. (Hunterian Lecture.)

WEDNESDAY AND FRIDAY.—5 P.M., Prof. W. Wright: The Comparative Anatomy of the Elephant. (Hunterian Lectures.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. L. Bunch: Clinique (Skin). 5.15 P.M., Lecture:—Dr. R. Jones: The Question of Legal Responsibility in Some Forms of Mental Weakness.

TUESDAY.—4 P.M., Dr. W. J. Fenton: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Raw (Liverpool): The Treatment of Acute Pneumonia with Vaccines—Results.

WEDNESDAY.—4 P.M., Mr. P. Turner: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. E. J. Barker: The Treatment of Large Herniæ.

THURSDAY.—4 P.M., Mr. H. Lett: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. H. Tubby: Acute Inflammation of Bone.

FRIDAY.—4 P.M., Mr. G. J. Jenkins: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Morton: The Use of Solid Carbon Dioxide Snow.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Cholera.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Owen: Pericarditis.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Clinical Pathology.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—10 A.M., Dr. W. Steuart: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. A. G. Auld: The Abdominal Factor in Respiration.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. H. D. Gillies: Acute Otitis Media, its Causes and Treatment.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. A. Duncan).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Lecture:—Dr. Habershon: Pneumothorax.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.

Course of Lecture-Demonstrations on Diseases of the Chest, with Special Reference to Tuberculosis (including a Tuberculin Course):—

MONDAY.—4.30 P.M., Mr. M. Leslie and Dr. A. G. Phear.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY AND FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Taylor: Clinical Cases.

CANCER HOSPITAL, Museum of the Hospital, Fulham-road, S.W.

WEDNESDAY.—5 P.M., Mr. J. Cunning: Malignant Disease of the Colon (illustrated by cases and microscopic and other specimens).

ROYAL EYE HOSPITAL (LONDON SCHOOL OF OPHTHALMIC SURGERY AND MEDICINE), St. George's-circus, Southwark, S.E.

TUESDAY.—4.30 P.M., Lecture:—Mr. James: Recent Work on Glaucoma and its bearing on Treatment.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Bridge-road, S.W.

TUESDAY.—5 P.M., Prof. C. J. Martin: The Early Bacteriological Work of Lord Lister.

THURSDAY.—5 P.M., Dr. G. H. K. Macalister: Various Products of the Tubercle Bacillus used in Diagnosis and Treatment and Current Views upon their Mode of Action.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—2 P.M., Dr. W. Griffith: The Pathology of the Skin.

THURSDAY.—6 P.M., Dr. M. Dockrell: Fungous Diseases of Hair—I., Hyphogenic Sycosis; II., Tinea.

UNIVERSITY OF LONDON (KING'S COLLEGE), Physiological Laboratory, King's College, London, W.C.

MONDAY.—4.30 P.M., Dr. O. Rosenheim: Recent Advances in Chemical Physiology and Pathology.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Honorary Staff: Demonstration of Medical and Surgical Cases. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Ramsbottom: Cerebral Syphilis. (Post-Graduate Clinic.)

FRIDAY.—4.30 P.M., Mr. J. H. Ray: Surgical Demonstration. (Post-Graduate Clinic.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1912 were given in THE LANCET of Dec. 28th, 1912.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1912 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 22nd, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan 23	29·82	W.	0·39	59	54	35	50	51	Overcast
,, 24	29·84	S.W.	...	58	52	47	47	49	Cloudy
,, 25	29·74	W.	0·01	59	48	46	44	46	Fine
,, 26	30·29	N.E.	...	61	43	34	36	38	Fine
,, 27	30·14	S.E.	...	59	44	34	35	36	Fine
,, 28	29·87	S.E.	...	48	46	36	40	41	Raining
,, 29	29·85	S.E.	0·22	46	46	41	43	43	Foggy

The following journals, magazines, &c., have been received:—British Review, Man, Canadian Medical Association Journal, Indian Medical Gazette, American Journal of Gastro-enterology, Hospital Assistant, Calcutta Medical Journal, Journal of State Medicine, St. Mary's Hospital Gazette, Canadian Practitioner and Review, Transvaal Medical Journal, Pacific Medical Journal, Journal d'Urologie, Archiv für Experimentelle Pathologie und Pharmakologie, Medical Review of Reviews, Office International d'Hygiène Public, Archives of Internal Medicine, Inter-State Medical Journal, Ophthalmology, School Hygiene, &c.

Communications, Letters, &c., have been received from—

A.—Association of Medical Men, Lond., Secretary of; Addenbrooke's Hospital, Cambridge, Secretary of; Dr. E. Atlee, Philadelphia; Alliance of Honour, Joint Secretaries of; American Breeders' Association, Cold Spring Harbour, N.Y.; Captain M. D. Ahern, R.A.M.C., Bermuda; Anglo-American Pharmaceutical Co., Croydon; Mr. R. R. Alexander, Kingston-on-Thames; Messrs. Arnold and Sons, Lond.; Messrs. Allen and Hanburys, Lond.; Dr. M. Afifi, Abbassia; Army Medical Service, Lond., Director-General of.

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Q.—Queen's Hospital, Birmingham, Secretary of.

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